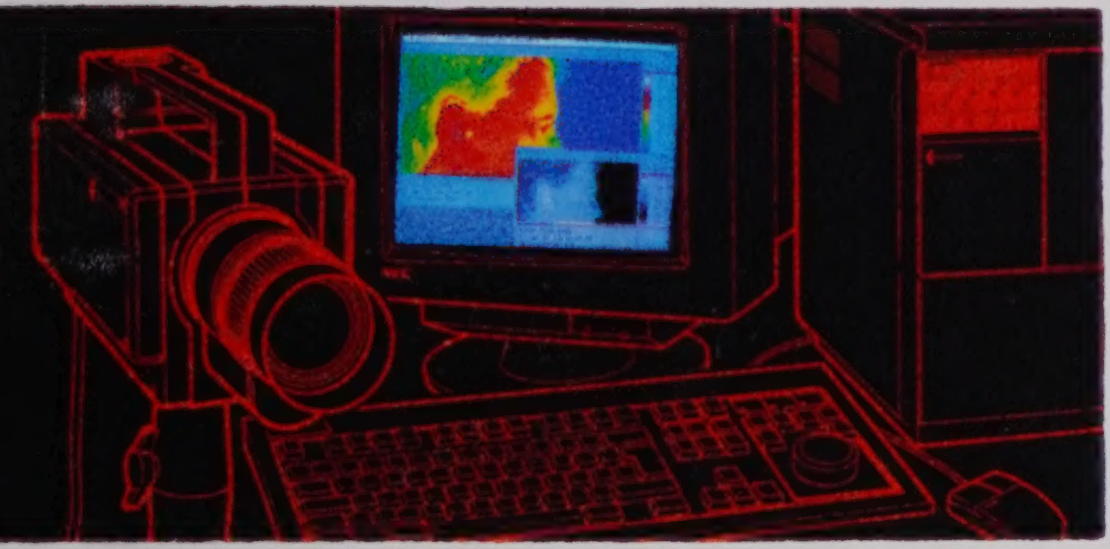
Thermovision® 900 Series

USERS' MANUAL



AGEMA Infrared Systems

Thermovision® 900 Software Reference Manual

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This document contains an alphabetical listing of all available functions in the Thermovision® 900 system. A Quick Reference guide at the end of this chapter lists the genuine functions and a number of appropriate keywords with references to their relevant system functions. The keywords are intended to be helpful when looking for the description of a function without knowing its precise name. The complete Menu Tree is also provided as a quick reference to the route required to locate a particular function.

1.1. Document Conventions

Each function is described as follows:

MENU:
The name of the menu in which the function appears in the system. The names and placement of menus are described in the following section.

OPTIONS:
A list of the possible options or parameters the function may have. Usually such choices will be in a sub-menu under the main function.

DESCRIPTION:
A short description of the function and of each of the options available.

Please note that the description of functions in this document assumes the reader is familiar with the operation and architecture of the Thermovision® 900 system. If not, the reader should first consult the "Tutorial" where the system operating principles are explained. Information can also be found in the On-line Help texts.

1.2. System Controls

The ERIKA software is structured around the X-windows presentation system. The system controls are as follows:

1.2.1. Mouse Controls

There are three basic mouse techniques used within the system:

- Pointing
- Clicking
- Dragging

The mouse controls the pointer on the screen. The different pointers and their uses are explained in the next section. The pointer is moved by moving the mouse over the desk top in the direction the pointer is required to move. Moving the mouse slowly results in small movements of the pointer, while moving the mouse faster produces larger pointer movements.

Clicking means pressing and quickly releasing a mouse button. By pointing at a window or menu option on the screen and then clicking a mouse button, menus or menu options are selected.

Dragging means holding down a mouse button and moving the pointer. In this way objects can be moved around the screen or resized.

Menus are opened and selections made by positioning the mouse pointer and clicking the **left** mouse button. Dragging within a window uses the **left** mouse button. Releasing the mouse button completes the action.

Clicking with the **left** mouse button on an icon will open the icon.

When clicking on window scroll bars to view text, lists, etc. both mouse buttons are used.

Positioning the pointer on a window title bar or icon and clicking the **right** mouse button brings that window/icon to the front. By clicking and dragging on the title bar using the right button the window is both moved to a new position and brought to the front.

Menus opened in error can be cancelled by positioning the pointer outside the menu box or in the menu title and clicking either mouse button.

1.2.2. Pointers

The following pointer symbols are used:

Background pointer

Window pointer.

Button pointer

Button pointer - in title bar

Menu pointer

Version window appearing

Please wait!

Cross-hairs - Used to locate Spots and start and end points of Lines and Areas within IR image

Move pointer - Used when moving or resizing a window

Text Editor symbol - Used to show that text (or a value) is to be entered

Window selection symbol. Used when moving windows to the front or back and when removing windows

Remove symbol - used when removing a window

1.2.3. Keyboard

The keyboard is a specially modified enhanced keyboard. The numeric keypad has been replaced with the controls for level and span, and isotherms while the majority of the function keys have been dedicated to specific tasks. The main keyboard uses the US standard layout.

Level and span are adjusted from the keyboard. Level or Span is selected by pressing the relevant key and the rotary knob is then used to change the settings. The levels of isotherms 1 and 2 are adjusted in the same way. Each of the keys around the rotary knob has an LED to indicate which function has been selected. Two LEDs in the indicator panel above the rotary

knob section of the keyboard indicate which IR window is active. The pre-defined function keys are described in detail in the relevant function descriptions.

Should the operator for some reason prefer not to use the rotary knob for changing the Level and Span, there are four buttons available below the temperature scale. From left to right they carry out the following functions:

Span bigger

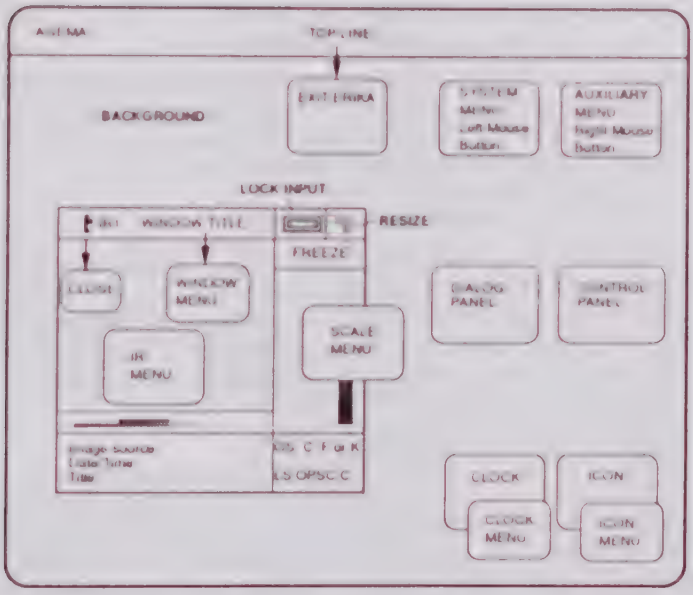
Span smaller

Level higher

Level lower

1.3. Windows, Menus and Functions

In order to open the menus listed in the alphabetical list of functions, their location with respect to the various windows must be understood. The following schematic diagram shows the location of each of the menus.



The Thermovision® 900 software (ERIKA) uses an object oriented approach to menus. Each element on the screen can be clicked on bringing up a menu with actions relevant to the element. The BACKGROUND area represents the system as a whole.

Some of the actions lead to tasks that are performed while allowing the operator to continue using the system (background tasks). Others lead to foreground tasks that must be completed before the operator can continue. These cause the system to appear locked. The operator can usually tell when the system is busy as a red hourglass symbol in most cases appears at the right hand end of the TOPLINE.

The TOPLINE is effectively the title bar for the screen presentation and contains the CURRENT LOCATION (or directory path) of the files in use.

1.3.1. Background Menus

The above menus are obtained as follows:

TOP LINE menu

Positioning the pointer on the TOPLINE and clicking the mouse button brings up the TOP LINE menu. This menu contains extra functions used for demo and test.

SYSTEM menu

The SYSTEM menu is the top level menu. Clicking the left mouse button with the pointer positioned anywhere within the background brings up the SYSTEM menu. The menu appears at the location of the pointer..

CLOCK menu

If any of the clock windows, either the ANALOG or DIGITAL clock window, has been selected from the CREATE WINDOW option of the SYSTEM menu, then positioning the pointer anywhere within the boundary of the clock window and clicking the left mouse button will bring up the CLOCK menu. The clock can then be moved or resized and the date and time set.

COMPANY LABEL menu

You can put up a window with the company label and logo on the screen provided the company name and logo have been stored before.

Provided those files are available, select CREATE WINDOW in the SYSTEM menu. Click on Company label and write the corresponding file names into the dialog panel.

The Company label window thus created can be moved to a suitable place on the screen.

ICON menu

When a window is closed using the CLOSE option it reduces to an ICON representing the window. Clicking the left mouse button with the pointer positioned within the icon boundary will open the ICON.

1.3.2. IR Window

This window contains the IR image and the information concerning the image. It is divided into several sections. The section to the right of the image contains the temperature scale in the form of a vertical bar displaying the colours or grey scale used in the image and the temperature represented by each colour.

If selected, the isotherm result lines will come up immediately below the image, one line per selected isotherm. Normally, however, there is a graphic presentation comparing the level and span set by the controls with the temperature information coming from the source. Below this is a text field containing the source information and the first 30 characters of the comment used as a Title.

In the right hand corner of the IR window is the Status field containing information about the measurement units (Object Signal, Centigrade, Fahrenheit, Kelvin) and image parameters (INVALID, Level and Span, Object Parameters for SCaling, Comment). LS, OPSC and C inform the operator that the parameters or comment are not those from the source.

1.3.3. IR Window Menus

Two specific menus can be opened from within the IR window as follows:

IR menu

This menu is opened by positioning the pointer within the image boundary and clicking a mouse button. Other sub-windows can then be opened, the image size can be changed and analysis of the image can then be performed.

Scale menu

The scale used in the image is displayed at the right of the image. The scale menu can be opened by positioning the pointer within the scale section of the IR window and clicking a mouse button. The palette can then be selected, the object parameters can be changed, the level and span can be set and possible offset correction can be introduced.

1.3.4. Window Menu and Window Title Bar

When any window is open, a window menu and other window handling functions can be reached from its title bar. A window is selected by moving the pointer to within its boundaries. The window title bar then becomes active.

The WINDOW menu can be obtained by positioning the pointer in the centre section of the title bar and clicking the left mouse button. Window handling options, allowing the window to be moved, resized, closed or removed, are then available.

The window can also be resized by positioning the pointer in the extreme right hand box of the title bar and pressing and holding the mouse button down. The pointer changes to the move symbol and the window can then be resized by dragging the pointer with the mouse. The new window size is outlined on the screen. Releasing the mouse button completes the resizing action.

To the left of the resize corner of the window title bar is the **lock input** selection. Clicking on this symbol locks the window selection. All menu and function actions are performed on the locked window irrespective of the position of the mouse pointer. Another window can be chosen. Unlock by selecting the Unlock Input option in the Window Handling menu or lock input in another window.

The window can be closed (reduced to an icon) by positioning the pointer over the small AGEMA logo at the left hand end of the title bar and clicking the left mouse button.

1.4. Dialog panels

On selecting some menu options, a dialog panel opens requesting additional information or requiring that a further selection be made. These further selections will normally be presented with a "button" alongside or with the selection appearing on the "button". The selection is made by pressing the button, i.e. positioning the mouse pointer over the button and clicking. In some cases the button then appears to be latched in the down position. Clicking on the button again or selecting another option releases the button to the up position.

The symbols on the buttons indicate the type of selection possible:

Single choice - only one button may be selected at a time

Multiple choice - Any or all buttons may be selected

Rolling selection - Cycles through selections displayed in a text field alongside

If the dialog panel requires that text be entered then the text editor pointer is positioned within the boundary of the dialog panel and the arrow keys used to select the text entry point (shown by the cursor position). The arrow keys also move the cursor between text fields. An active cursor is shown as ■ and the inactive cursor as _.

When the information requested has been completed then clicking on the OK button, normally located at the bottom of the panel, loads the information.

Clicking on the CANCEL button removes the dialog panel and no action is taken.

Clicking on the HELP button brings up a Help text window with information concerning the action being performed. The operator can also examine other Help texts.

In some dialog panels a LIST button is also displayed. Clicking on this button brings up a further dialog panel with a list of the current directories and files available.

1.5. Control panels

There are several control panels used in the system for controlling specific functions in the background. Examples of these are the Scanner Control and Recall Sequence panels. They differ from the dialog panels in that there are no text fields requiring input from the operator.

1.6. Warning panels

At any time during the operation of the system the user may receive information concerning errors or warnings. These are displayed in the form of panels stating the location of the error or warning and giving information as to the cause of the error or the system function that requires attention. The warning panels can be given in three different colours, white, yellow and red, where a white panel only carries information, the yellow one indicates a probable operator error whereas the red window might indicate a system fault.

It is recommended to take notes of any error panel that appears. Clicking on the CONFIRM button acknowledges that the problem has been noted. The user can also ask for help by clicking on the HELP button.

1.7 Menu Tree

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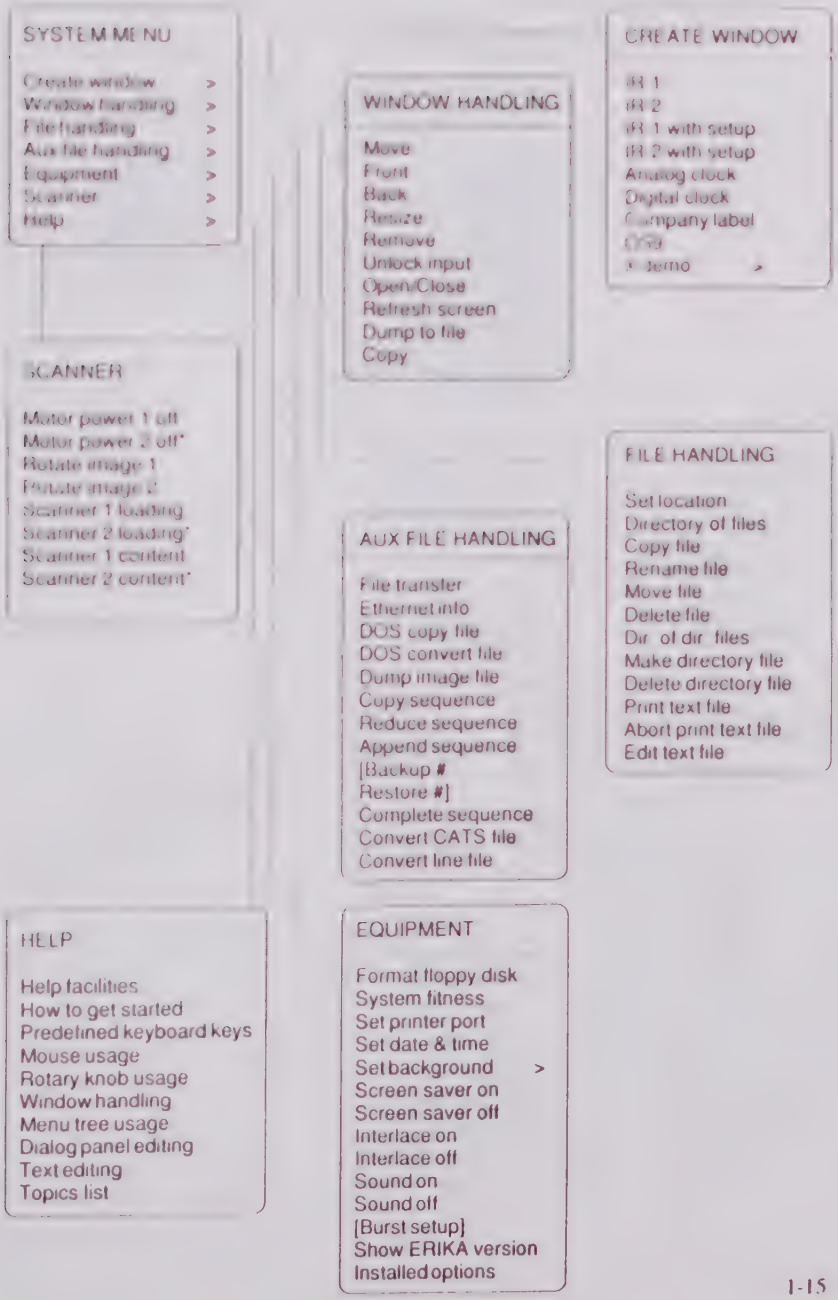
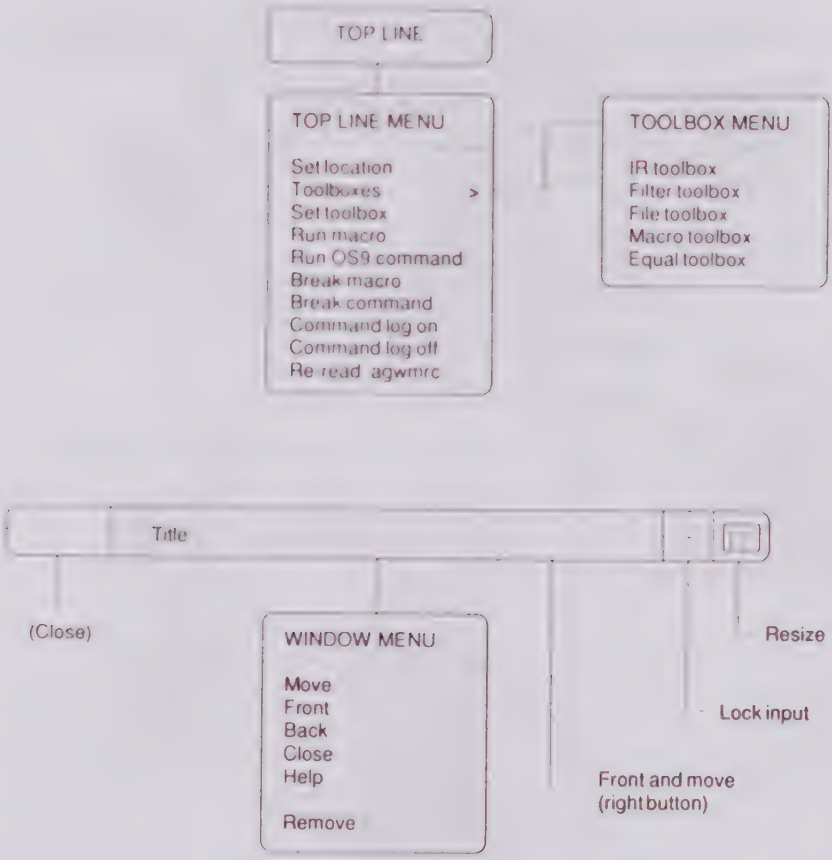
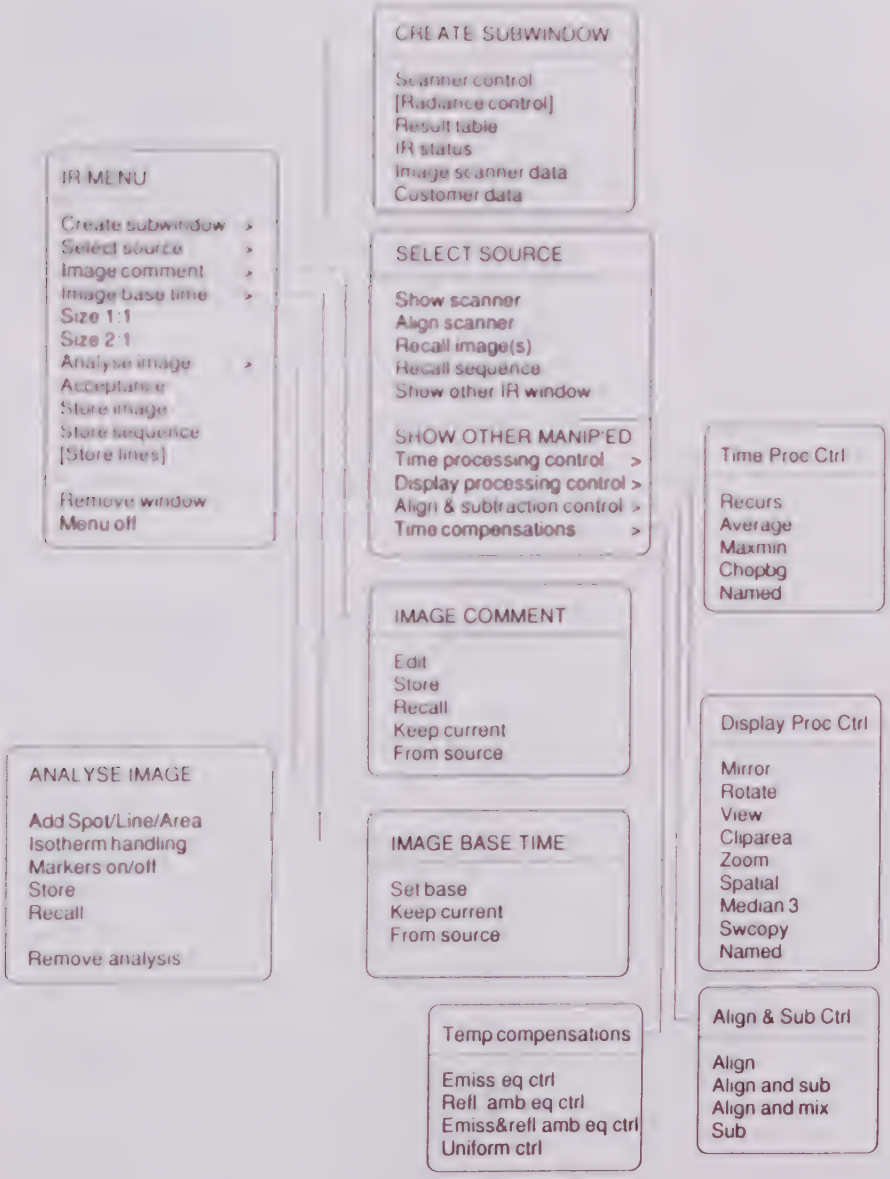
1.7.1 System Menu



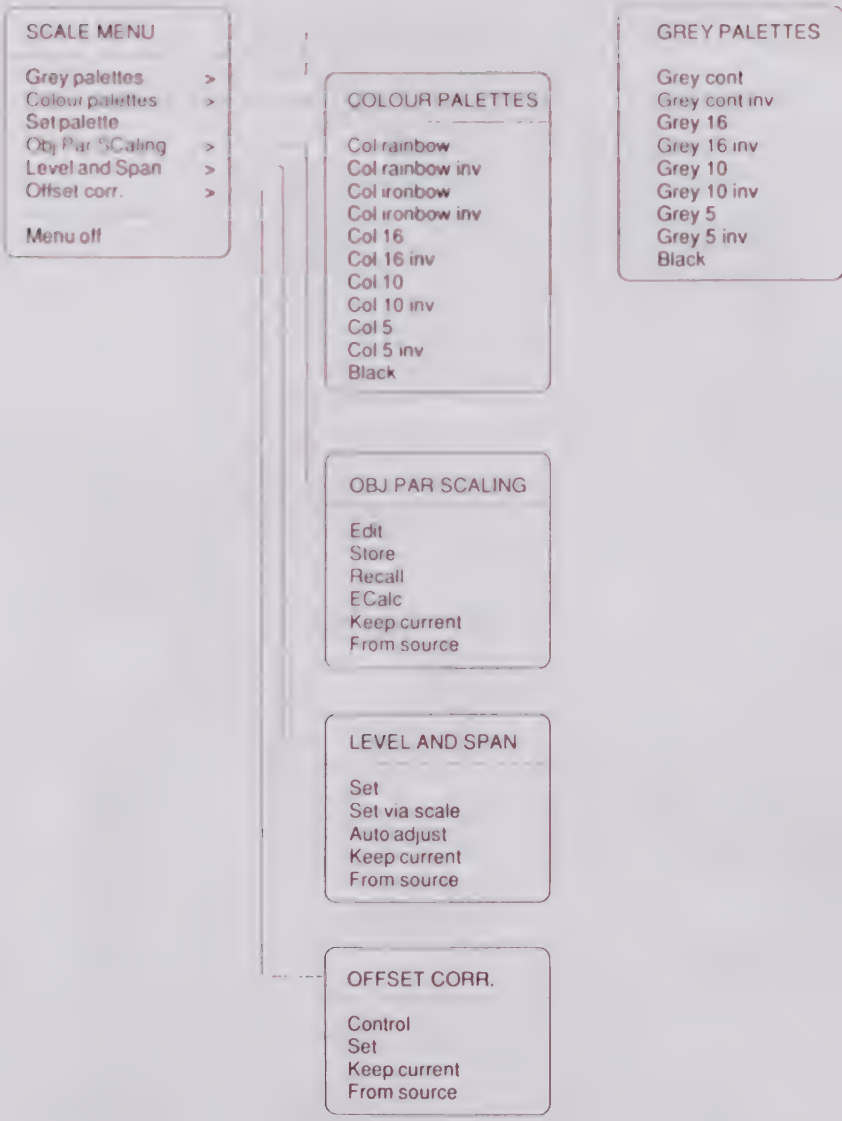
1.7.2 Top Line Menu



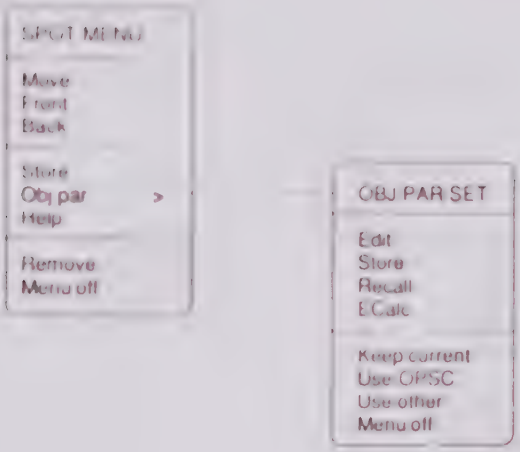
1.7.3 IR Menu


IR MENU
Create subwindow >
Select source >
Image comment >
Image base time >
Size 1:1
Size 2:1
Analyse image >
Acceptance
Store image
Store sequence
[Store lines]
Remove window
Menu off
CREATE SUBWINDOW
Scanner control
[Radiance control]
Result table
IR status
Image scanner data
Customer data
SELECT SOURCE
Show scanner
Align scanner
Recall image(s)
Recall sequence
Show other IR window
SHOW OTHER MANIP'ED
Time processing control >
Display processing control >
Align & subtraction control >
Time compensations >
IMAGE COMMENT
Edit
Store
Recall
Keep current
From source
IMAGE BASE TIME
Set base
Keep current
From source
ANALYSE IMAGE
Add Spot/Line/Area
Isotherm handling
Markers on/off
Store
Recall
Remove analysis
Temp compensations
Emiss eq ctrl
Refl amb eq ctrl
Emiss&refl amb eq ctrl
Uniform ctrl
Time Proc Ctrl
Recurs
Average
Maxmin
Chopbg
Named
Display Proc Ctrl
Mirror
Rotate
View
Cliparea
Zoom
Spatial
Median 3
Swcopy
Named
Align & Sub Ctrl
Align
Align and sub
Align and mix
Sub

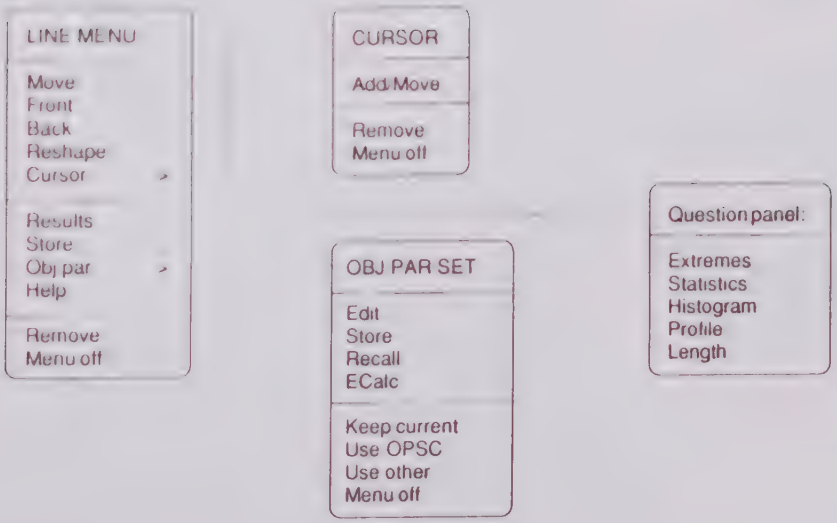
1.7.4 Scale Menu



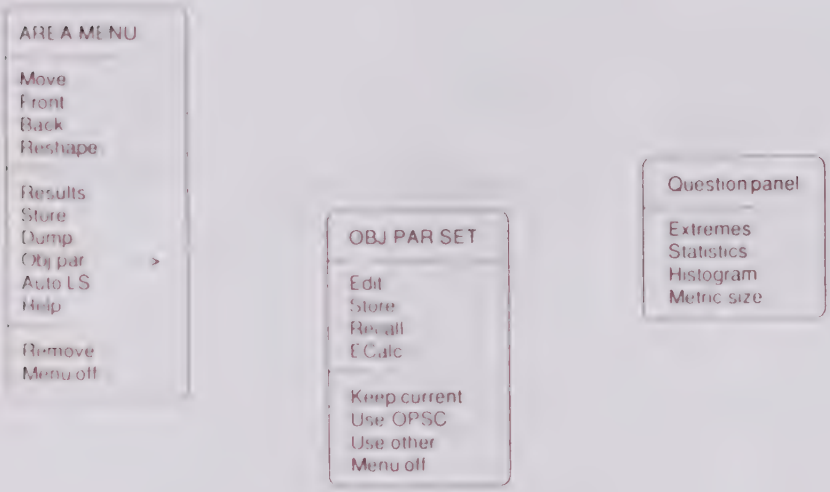
1.7.5 Spot Menu



1.7.6 Line Menu

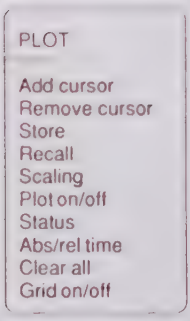


1.7.7 Area Menu



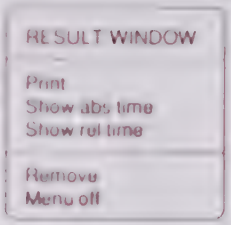
1.7.8 Plot Menu

Right button:

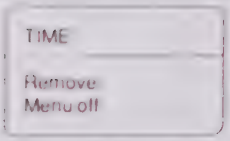


1.7.9 Result Window handling

On the first line of the result window

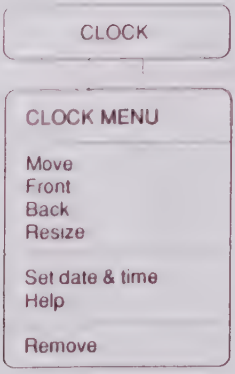


On the Time line



On the next lines of the result window.

1.7.10 Clock Menu

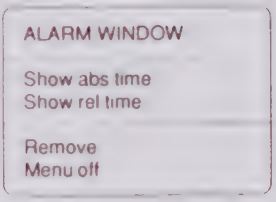


Front and move (right button)

1.7.11 Company Label Menu

1.7.12 Alarm Window Menu

From the top line of the Alarm Window:



1.7.13 Alarm Menu

From result lines in the Alarm Window:

1.8. Quick reference

The following is a list of all functions to be found in this manual. Some keywords have also been added to aid identification of the function required.

Abort Print Text file
Absolute time/relative time
Acceptance
Add area
Add line
Add spots
Alarm
Align
Align and mix
Align and subtract
Align and subtraction control
Analog clock
Analyse image
Append sequence
Auto adjust, see Level and span
Auto LS
Aux file handling
Average, see Time processing control
Back
Backup*
Base time
Beep, see Sound on/off
Bitmap
Break command
Box, see Add area
Chopbgd, see Time processing control
Circle, see Add area
Cliparea, see Display processing control
Close, see also Remove
Colour paletteS
Command log on/off
Comment, see Image comment
Company label
Complete sequence
Convert CATS file
Convert line file*
Copy
Copy file
Copy sequence
Create subwindow
Create window

Customer data, see Create subwindow
Delete directory file
Delete file
Digital clock
Directory of directory files
Directory of files
Display processing control
DOS convert file
DOS copy file
Dump
Dump image file
Ecalc, see Obj Par Scaling
Edit text file
Edit comment, see Image comment
Edit Object parameters, see Obj Par SCaling
Ellipse, see Add area
Emissivity & Reflected ambient control, see
Temperature compensations
Emissivity equalization control, see
Temperature compensations
Equipment
Ethernet info
Extreme values, see Results
File handling
File toolbox, see Toolbox
File transfer
Filter selection, see Scanner control
Filter toolbox, see Toolbox
Focus + -, Refer to Hardware Manual
Format floppy disk
Freeze
From source
Front
Function keys
Grey palettes
Help
Histogram, see Results
Image base time
Image comment
Image scanner data, see Create subwindow
Installed options
Interlace on/off
IR status, see Create subwindow
IR toolbox, see Toolbox
IR window size, see Size
Isotherm handling
Keep comment, see Image comment
Keep current

Keep parameters, see Obj Par for SCaling
Level and span
Line, see Add line
Lock input, see Unlock input
Make directory file
Make toolbox, see Show other manip'd
Maxmin
Median 3, see Display process control
Mirror, see Display processing control
Motor power on/off
Move
Move file
Named, see Time/Display processing Control
Object parameters
Obj Par for SCaling
Offset correction
Open
Open IR window, see Create window
OS9
Plot
Profile, see Results
Radiance control*
Range selection, see Scanner control
Recall
Recall comment, see Image comment
Recall image(s)
Recall object paramenters, see Obj Par SCaling
Recall sequence
Recursive, see Show other manip'ed
Reduce sequence
Reflected ambient control, see Temperature compensations
Refresh screen
Relative to base
Remove, see also Close
Remove analysis
Rename file
Re-read .agwmrc
Reshape
Resize
Restore*
Results
Result table, see Create subwindow
Rotate image
Rotate, see Display processing control
Run macro
Run OS9 command

Scanner
Scanner content
Scanner control
Scanner loading
Screen saver on/off
Select Source
Set background
Set base time
Set date and time
Set location
Set palette
Set printer port
Set toolbox, see Toolbox
Show absolute time, relative
Show ERIKA version
Show other manipulated
Show other IR window
Show scanner
Size
Sound on/off
Spacial, see Display processing control
Span, see Level and span
Spot, see Add spot
Statistics, see Results
Store
Store comment, see Image comment
Store image
Store lines*
Store object paramenters, see Obj Par SCaling
Store sequence
Subtract
SWcopy, see Display processing control
System fitness
Temperature compensations
Time presentation
Time processing control
Toolbox
Trig A, B, see Store sequence
Uniform control, see Temperature
compensations
Unlock input
User defined menu
View, see Display processing control
Window handling
X demo
Zoom, see Display processing control

2. System Functions

ABORT PRINT TEXT FILE

MENU: System menu - File handling menu

OPTIONS:

DESCRIPTION:

Once the printing of a text file on the printer has started it will go on uninterrupted until you stop it.

By selecting Abort Print text file the current printout will stop and all files presently in queue for printout will be discarded.

ABSOLUTE TIME

MENU: Time presentation menu

OPTIONS:

DESCRIPTION

The IR window presents the image capture time in a line below the image. The information can also be shown in the result window. In this case it shows the absolute time of the clock.

ABSOLUTE/RELATIVE TIME

MENU:

Plot menu
Result window menu

OPTIONS:

Absolute time
Relative time
Show absolute time
Show relative time

DESCRIPTION

In the plot menu the time for the plots can be set either to absolute time, i.e. the time of the clock(s) or to relative time, i.e. a time which is relative to the base time.

See the function Set base time

In the result window(s) the time can be shown by clicking on the first line of the window. The selected time, i.e. absolute or relative time, see above, will then be shown in a new line just under the first line of the results window.

ACCEPTANCE

MENU: IR menu

OPTIONS:

DESCRIPTION

This panel controls the image acceptance. Images are accepted according to the defined conditions. The plot process for example will only plot accepted images. Without the acceptance process active all images are accepted.

Upon clicking on Acceptance in the IR menu the acceptance dialog panel will be brought up. There is a number of options to select.

First of all there are the START acceptance options. Click on the arrow down button in the dialog panel to step through the different options. They are the following:

Now	Starts the image acceptance as soon as the OK button is clicked on.
At HH:MM:SS	Starts the image acceptance at the time specified. The time is entered in the text field under the option field. If the complete time is not entered the system assumes the first pair of numbers to be the hours.
At Keyboard Trig:	Starts the image acceptance when a keyboard trig button is pressed.
At External Trig:	Starts the image acceptance when an external trig button is pressed.
At Alarm Trig:	Starts the image acceptance when an alarm trig is received.

Next option to be set is the ACCEPT option. Go through the various options as for the START option.

All images — Accepts all images.

At HH:MM:SS interval: Accepts an image at the time interval set. The time is entered in the text field under the option field. If the complete interval time is not entered the system assumes the last pair of numbers to be the seconds.

At Keyboard Trig: Accepts an image when a keyboard trig is pressed.

At External Trig: Accepts an image when an external trig is pressed.

The final option to be set is the UNTIL option. Select as for the other options.

Forever: Accepts images forMever.

H:MM:SS duration: Acceptance is stopped after the duration set. The time is entered in the text field under the option field. If the complete duration time is not entered the system assumes the last pair of numbers to be the seconds.

At Keyboard Trig: Stops image acceptance on a keyboard trig.

At External Trig: Stops image acceptance when on external trig.

At Alarm Trig: Starts the image acceptance when an alarm trig is received.

Click the OK button in the dialog panel to start or to modify the acceptance control process.

The HELP button brings up a help text window with information about the ACCEPTANCE function.

The CANCEL button cancels the function and removes the dialog panel from the screen.

Upon pressing OK a control panel will appear, in which the numbers of accepted and lost images will be presented.

ADD AREA

MENU: IR menu - Analyse image - Add Spot/Line/Area

OPTIONS: Area
Box

DESCRIPTION

Allows an area of interest in the image to be analysed.

When ADD SPOT/LINE/AREA is selected from the ANALYSE IMAGE menu the text window under the image is replaced with a set of selection buttons:

ADD	EDIT	UNDO
OK/COMPLETE	HELP	CANCEL

Alongside the buttons, in a separate field, appears the instruction - "Press ADD". Clicking on the ADD button brings up a short menu with the analysis options: Spots, Line, Box, Area, Circle, Ellipse.

Clicking on the AREA or BOX option changes the pointer to the crosshair symbol which is used to select the corners of the required area. The OK button changes to COMPLETE. Position the crosshairs at the point required for the start of the area and click the left mouse button. Select the next corner point and click again. A line joins the two points together. If the mouse button is kept depressed while moving the crosshairs the line is moved dynamically. The image coordinates are displayed for each corner as it is selected. With the BOX option only two diagonally opposite corners are needed.

Continue selecting the corner positions (a maximum of 64 corners can be used) and the area outline will be created. It is not necessary to select the start point again to complete the area as the system will automatically connect the last corner to the first when the COMPLETE button is clicked on. This line will not be completed if it crosses part of the area selected. "Crossing" is shown in the field alongside the buttons.

Clicking on the CIRCLE or ELLIPSE option changes the pointer to the crosshair symbol. Position this pointer there, where you want the centre of the circle to be and click on

the mouse. Then the next point will define a point on the crosshair symbol which is used to select the corners of the required line. The OK button changes to COMPLETE. Position the crosshairs at the point required for the start of the line and click the left mouse button. Select the next point and click again. A line joins the two points together. If the mouse button is kept depressed while moving the crosshairs the line is moved dynamically. The image coordinates are displayed for each point as it is selected.

Continue selecting the corner positions (a maximum of 64 corners can be used) and the line will be created.

Clicking on the EDIT button brings up a menu with MOVE and RESHAPE options. Refer to the MOVE/ RESHAPE function descriptions.

Clicking on the UNDO button before the COMPLETE button is clicked removes the last line drawn. After the COMPLETE button has been clicked on the UNDO button removes the complete line from the image.

The CANCEL button cancels the Add line function and removes the buttons from the screen.

The HELP button brings up a help text window with information on the Add line function.

After clicking on the COMPLETE button, after selecting the last point, the button reverts to OK. Clicking on the OK button changes the line colour and adds an identification flag (LI01, 02, etc.). Further Spots/Area/ Lines can be added before clicking on OK.

In the Results window, which was opened when you clicked on Analysis image, a line identification number will be entered. Further analysis on a time-temperature plot basis can be activated by clicking on this line. Refer to the PLOT function description for further details.

Further analysis options are available in the Line menu. Refer to the RESULTS function description for further details.

ADD LINE

MENU: IR menu - Analyse image - Add Spot/Line/Area

OPTIONS:

DESCRIPTION

Allows the image temperatures along a line to be analysed.

When ADD SPOT/LINE/AREA is selected from the ANALYSE IMAGE menu the text window under the image is replaced with a set of selection buttons:

ADD	EDIT	UNDO
OK/COMPLETE	HELP	CANCEL

Alongside the buttons, in a separate field, appears the instruction - "Press ADD". Clicking on the ADD button brings up a short menu with the analysis options: Spots, Line, Box, Area.

Clicking on the LINE option changes the pointer to the crosshair symbol which is used to select the corners of the required line. The OK button changes to COMPLETE. Position the crosshairs at the point required for the start of the line and click the left mouse button. Select the next point and click again. A line joins the two points together. If the mouse button is kept depressed while moving the crosshairs the line is moved dynamically. The image coordinates are displayed for each point as it is selected.

Continue selecting the corner positions (a maximum of 64 corners can be used) and the line will be created.

Clicking on the EDIT button brings up a menu with MOVE and RESHAPE options. Refer to the MOVE/ RESHAPE function descriptions.

Clicking on the UNDO button before the COMPLETE button is clicked removes the last line drawn. After the COMPLETE button has been clicked on the UNDO button removes the complete line from the image.

The CANCEL button cancels the Add line function and removes the buttons from the screen.

The HELP button brings up a help text window with information on the Add line function.

After clicking on the COMPLETE button, after selecting the last point, the button reverts to OK. Clicking on the OK button changes the line colour and adds an identification flag (LI01, 02, etc.). Further Spots/Area/ Lines can be added before clicking on OK.

In the Results window, which was opened when you clicked on Analysis image, a line identification number will be entered. Further analysis on a time-temperature plot basis can be activated by clicking on this line. Refer to the PLOT function description for further details.

Further analysis options are available in the Line menu. Refer to the RESULTS function description for further details.

ADD SPOT

MENU: IR menu - Analyse image - Add Spot/Line/Area

OPTIONS:

DESCRIPTION

Allows the image temperature at selected points to be analysed.

When ADD SPOT/LINE/AREA is selected from the ANALYSE IMAGE menu the text window under the image is replaced with a set of selection buttons:

ADD	EDIT	UNDO
OK	HELP	CANCEL

Alongside the buttons, in a separate field, appears the instruction - "Press ADD". Clicking on the ADD button brings up a short menu with the analysis options: Spots, Line, Box, Area.

Clicking on the SPOTS option changes the pointer to the crosshair symbol which is used to select the points required. Position the crosshairs at the point required and click the left mouse button. Select the next spot (a maximum of 99 spots can be used) and click again. The image coordinates are displayed for each spot as it is selected.

Clicking on the EDIT button brings up a menu with the MOVE option. Refer to the MOVE function description.

Clicking on the UNDO button removes the spot from the image.

The CANCEL button cancels the Add spots function and removes the buttons from the screen.

The HELP button brings up a help text window with information on the Add spots function.

Clicking on the OK button adds an identification flag (SP01, 02, etc.) to all the spots selected. Further Spots/ Area/Lines can be added before clicking on OK.

In the Results window, which was opened when you clicked on Analysis image, spot identification number(s) will be entered. Further analysis on a time-temperature plot basis can be activated by clicking on this line. Refer to the PLOT function description for further details.

ALARM

MENU: Result window - Result lines

OPTIONS: Alarm condition

Trigs

Alarm output.

DESCRIPTION:

ALARM CONDITION

Start by setting up/redefining alarms. Alarms are connected to analysis results. Output is done when a result passes a given limit. It is possible to activate alarms for any measurement function.

There are two input fields "Alarm above" and "Alarm below".

Indicate the active limits (decimal number). Only a field with something written into it is used in alarm conditions.

If "Alarm above" says "30" and "Alarm below" is empty, alarm will be activated only if the measurement value exceeds "30".

TRIGS

Alarms may produce trigs, which can be used for controlling storage of a sequence, acceptance and wait commands. Alarm trigs are given independent of acceptance status. They are given to one of the External trigs, A, B, C or D.

The following trig functions exist:

Trig when entering the alarm condition

Trig when leaving the alarm condition.

ALARM OUTPUT

Alarm output is given only for accepted images. It has the following options:

No output	- No output is given
Enter	- Output on entering alarm condition
Exit	- Output on leaving alarm condition
Entry/Exit	- Output on entering or leaving alarm condition
Continuous	- Output continuously when in alarm condition

"CONTINUOUS" has an input field for the time between outputs.

There is a push-button to activate a BEEP upon alarm.

LOG TO PRINTER is a text which is shown in every alarm log.

Select a suitable text defining the measurement function and/or the special condition. Logs are written to the system printer. It is possible to redirect the text to a file.

EXTERNAL OUTPUT.

The system controller has 4 digital external output pins (A - D) in the "EXT IN/OUT" port on the rear side of the System controller. It is possible to connect alarm "level" to one of the four output pins or to select a short pulse on the output pin when entering or leaving the alarm condition.

COMMANDs can be given when alarm is activated. It is possible to give an ERIKA command or an OS9 command. One possible ERIKA command is RUN_MACRO. OS9 commands can be a script, built up like a batch file, so this is a powerful possibility.

Commands to be given are written into the input field. If the field length is too short, or the command is too complex, use a macro/script to do the actual work. (Note that the character " is not allowed in the command field - use a script).

Clicking the OK button activates the alarm and brings up a window which displays the alarm status (if not already active).

The CANCEL button cancels the function and removes the dialog panel from the screen.

ALIGN AND SUBTRACTION CONTROL

MENU: IR menu - Select source - Show other manipulated

OPTIONS:
Align
Align and subtract
Align and mix
Subtraction

DESCRIPTION:

The "Align and subtraction" filters both use a reference image. The incoming images can be shifted, turned and stretched by the align filter, to make them match the reference. The reference image can also be subtracted from the incoming images (in temperature) by the subtraction filter. Alignment and subtraction can be combined into one operation. Alignment can also be used if you want to magnify parts of an image.

When you have made your choice, a control panel will show up. It enables you to select the filter you want, and to enter some parameter to the filter.

You stop the manipulations by selecting another source in the destination IR window or by removing one of the IR windows.

It is possible to specify separate level and span, object parameters and comment for the resulting images. The destination IR window can be frozen independently. Freezing of the input channel will also stop the image distribution in the recipient channel.

It is possible to add custom designed manipulation filters.

How to interact with the alignment filter:

Start by fetching the Reference image to the current channel or "the other" one. It can be an image from scanner or disk etc. Store it as reference using the "Keep IR-x as reference" button.

You may also start by looking at a previously stored reference image using the selection "Show reference image" of the upper arrow button. Press SET to get it shown. A reference image has the text "Ref image" added to its name. DO NOT store it again. Display the image to be aligned in "the other" channel, it can also be an image from any source,

Two pairs of spotmeters are used as reference points for the alignment. Move the two spotmeters in the reference image to easily identifiable positions in the object. Preferably as far apart as possible. (Use right mouse button on spot marker).

Then move the two spotmeters in the image to be aligned to the corresponding points.

Select "Process IR-x" and "Align and mix IR-x with ref" by the upper and lower arrow buttons on the panel and press SET. Then a mix of the two images will be created. Check the quality of the alignment. A doubling of window size will enable a check down to pixel level. Finetune the alignment by slightly moving the spotmeters in some image and then press the SET button again.

When the alignment is satisfactory, select "Align IR-x with ref" by the lower arrow button , press SET, and an aligned image will be obtained.

You can also select "Align & subtract IR-x with ref" and press SET, in which case the resulting image will be the aligned image with the reference image subtracted from it.

It is now possible to align (and subtract) any number of images by changing Image source in the input(other) channel.

Resulting images can be saved using the functions Store Image or Store Sequence in the output channel.

Please note that the alignment filter creates real images. If you store images when the reference image or the mix is displayed, then these images will be stored, however odd it may seem.

If you want to use a different reference image, bring it into one of the channels and press "Keep IR-X as reference" button. This only stores the reference, not activates it. In order to make the new reference work, you have to select Process IR-x" again with the same sub-selection as before, and press SET.

ALIGN SCANNER

MENU: IR menu - Select source

OPTIONS:

DESCRIPTION:

The purpose of the Align Scanner function is to enable a live scanner image to be geometrically aligned to a Reference image.

Alignment is the basis for automatic comparisons of the scanner images to other images by subtraction and for automatic measurement using stored analysis functions.

If you already have captured some images and stored them on disk, you have to use another alignment function. Try processing them with the Align&Subtraction control function in the same menu.

The image to align with is called a reference image. Display the image you want as reference in either channel. Any image will do.

You can use the same scanner or another scanner or images stored on disk. Use the rotary knob to get good colours and contrast in the display. Save the reference image using the appropriate "Keep IR-X as ref" button.

The selections by the arrow push-button give you the opportunity to see the scanner image only, the reference image only or both with a fine or coarse chequer pattern.

Move the scanner or object physically until you get good alignment, and freeze or store the image.

The reference image is only shown on top of the scanner images, never interfering with them. If you store images, only the scanner image will be stored. No chequer pattern will be stored.

ANALOG CLOCK

MENU: System menu - Create window

OPTIONS:

DESCRIPTION

This function opens an analog clock window. This analog clock shows the time in the form of a normal (analogue) clock. If it need be set, use theSet date and time dialog panel to set the time. It is usually comfortable to move the clock window up to the upper right corner of the screen after having opened it.

When you use the Set date and time dialog panel, start by erasing the time to be changed using the Backspace button.

The size of the clock window can be changed by clicking on the clock and using the Resize function.

ANALYSE IMAGE

MENU: IR menu

OPTIONS: Add Spot/Line/Area
Isotherm handling
Remove analysis

DESCRIPTION

Enables image analysis by means of spotmeters, lines, areas and isotherms. When the area option is used extremes, statistics, histogram and size (in mm^2 or m^2) of the line can be used for showing the temperature distribution along the line. The length is calculated going out from the set distance to the object adding the segments of the line to the final result, where each segment is calculated according to Pytagoras' theorem.

The temperature profile shows the temperature along the line. The profile has a cursor as well, with which it is possible to read the temperature in each single point along the profile. By setting a mark in the profile there will be a crosshair in the original line in the image showing where the corresponding point is to be found.

For an explanation of the various options available from this menu refer to the individual function descriptions:

Add area Options: Area, Box, Circle, Ellipse

Add line

Add spots

Isotherm handling

Markers on/off

Store

Recall

Remove analysis

APPEND SEQUENCE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION: This function adds the images of a .SEQ file to the end of another .SEQ file.

Use the arrow keys to move the cursor within the field. Use the Delete or Backspace keys to delete the letters to change.

The LOCATION appears with just a full stop indicating the current directory. Enter new directory into the field if you do not wish to remain at the current directory.

The NAME field appears blank. Type the sequence name into the field. The sequence must be a sequence file with extension .SEQ

Clicking on the LIST button brings up a window listing the directories available. Select a directory from the list and click the OK button to load this information into the location field of the dialog panel.

The second LOCATION appears with just a full stop indicating the current directory. Enter new directory into the field if you do not wish to remain at the current directory.

The To_NAME field appears blank. Type the name of the destination sequence into the field. The sequence must be a sequence file with extension .SEQ.

Note that the appended images will get new numbers, starting after the last number of the destination sequence.

Click the OK button in the dialog panel to append the source sequence to the destination sequence. If the destination sequence does not exist it will be created.

The CANCEL button cancels the function and removes the dialog panel from the screen.

AUTO LS

MENU: Area menu

OPTIONS:

DESCRIPTION:

Carries out automatic adjustment of the level and span to suit the temperature distribution inside the area, for which AUTO LS was demanded. This command will thus highlight the contents of that particular area. It need not necessarily give the best colorization of the rest of the image.

AUXILIARY FILE HANDLING

MENU: System menu - Auxiliary file handling

OPTIONS:
File transfer
Ethernet info
DOS copy file
DOS convert file
Dump image file

DESCRIPTION

In contrast to the FILE HANDLING function, the AUXILIARY FILE HANDLING offers some special file handling facilities.

The File transfer and the Ethernet info selections deal with the Ethernet communication whereas the DOS copy file and the DOS convert file carry out the conversion of OS9 files to/from DOS and the storage of mainly image files in DOS format.

The Dump image file function writes a dump of the information in a given image file.

For a closer explanation of the various options available from this menu refer to the individual function descriptions as listed in OPTIONS.

BACK

MENU:

Area menu
Clock menu
Company label menu
Icon menu
Line menu
Spot menu
System menu - Window handling
Window menu

OPTIONS:

DESCRIPTION

Moves the selected window or analysis function behind all other windows or functions.

When BACK is selected from the WINDOW HANDLING menu the pointer changes to a black spot which must be placed within the boundary of the window to be moved to the back. The mouse button is then clicked and the window moves to the back.

When BACK is selected from a WINDOW menu, the CLOCK menu or the COMPANY LABEL MENU then the window immediately moves to the back.

BACK can also be selected from the AREA, LINE or SPOT menus. Position the window pointer on the analysis function marker, e.g. ARO1, ARO2, LI01 etc., and click the mouse button. The menu opens and BACK can then be selected. The selected analysis function marker immediately moves to the back of the other functions.

CLOSE

MENU:

Company label menu
Icon menu
System menu - Window handling
Window menu
Window title bar - AGEMA logo

OPTIONS:

DESCRIPTION

Reduces the selected window to an ICON. The icon is a representation of the window. The icon can be treated in the same manner as any other window.

Selecting CLOSE from the WINDOW HANDLING menu changes the pointer to a black spot which must be placed within the boundary of the window to be closed. Click the mouse button and the window reduces to an icon.

When CLOSE is selected from a WINDOW menu the window reduces immediately to an icon.

Clicking on the logo at the extreme left of any window reduces that window to an icon.

If an icon is subsequently moved the position of the original window and the new location of the icon are both remembered by the system so that on re-opening the window it appears in its original position, and, on reclosing the window, the icon re-appears at its last location.

COLOUR PALETTES

MENU: Scale menu - Colour palettes

OPTIONS:
Col rainbow
Col rainbow inv
Col ironbow
Col ironbow inv
Col 16
Col 16 inv
Col 10
Col 10 inv
Col 5
Col 5 inv
Black

DESCRIPTION

Enables the user to choose the colour range used in the image.

COL RAINBOW and COL RAINBOW INV are continuous colour palettes using 112 continuous colours.

COL IRONBOW and COL IRONBOW INV are continuous colour palettes using the colours Black, Blue, Violet, Red, Yellow and White.

Selecting COL 16, 10 or 5 displays the measurement range with sixteen, ten or five colours. INV indicates that the colour scale is inverted.

Selecting BLACK sets the complete measurement range displayed in the image to black. The only thing that can be seen in the image if BLACK has been selected is one or two isotherms.

COMMAND LOG ON/OFF

MENU: Top line menu

OPTIONS:

DESCRIPTION: After this command has been activated all commands issued by the system or by the operator by clicking in the menu will be stored in a file in macro command format.

The command logging is stopped either by clicking on the

Command log off choice in the Top line menu or by issuing the command STOP_LOG.

COMPANY LABEL

MENU: System menu - Create window

OPTIONS:

DESCRIPTION

This function writes a selected text file (and a possible X11bitmap file) to a window. If you only want to see the bitmap you have to indicate an empty text file.

In order to get a complete company label up into a window on the screen, where 'complete' means a company name and a company logo or one of them only, you first have to prepare the company name and the company logo.

The company name is prepared as a text file. This is preferably done by using the EDIT TEXT FILE function. DOS CONVERT FILE function. Store the company name file and go, if necessary, over to preparing the company logo. Do it the following way: open an OS9 window by clicking on OS9 in the CREATE WINDOW menu.

When the OS9 window is opened, you can create such a file by using the bitmap editor 'bitmap', which you can reach now by giving the command 'bitmap <filename>'. No filename gives help. Be careful not to use the same file name as for the company name.

This command will give you a 16 x 16 points editor, with an extensive list of available functions beside it. By clicking on the mouse in this bitmap field you can paint the small squares black one by one, thus creating a copy of the company logo. Store the logo by getting out of the function by selecting the appropriate exit function. Ignore the possible warning text saying something like "cannot delete filename.BAK".

During the bitmap editing there is a small picture of the logo in the lower right corner of the window.

Having done this, leave the OS9 window by removing it. Click on the window top line and select Remove.

Call up the Company label function, find the correct company name file and the prepared company logo file, write the respective names into the dialog panel. This will produce a window with the company logo to the left and the company name to the right of the logo.

COMPLETE SEQUENCE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION: This function makes it possible to reconstruct a thermal image of an object as it was a little while ago. This method can be useful if the object is hidden from the scanner but can be made visible, however then being in a cooling off state.

Provided an exponential approach to the ambient temperature is applicable this function offers the possibility to reconstruct a thermal image, which shows the temperatures of the object at a moment which lies some time back, i.e. when the object was still hidden from direct measurement.

Let us assume that the object sits inside a hot/cold box and you wantt an image which shows the temperatures on the object when it is still inside that box. At the moment when the lid is removed from the box the object starts adapting to the new ambient temperature and the lid takes some time to remove.

Set up the storage of a sequence of three images. Take the first image when the lid is beginning to be removed, the second as soon as possible after the lid has been cleared away and the third one some time later, 5 to 10 times the interval between the first two images.

The function will reconstruct the first image, i.e. it will complete the sequence so to speak.

The function works only with sequences of images stored on disk and it takes a substantial amount of calculation as each point of the image must be handled individually, calculating the particular cooling off speed in every single point.

CONVERT CATS FILE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION: Image files of CATS format can be converted to ERIKA format, it works only with images stored on disk or diskette. The best way is to bring the images to the ERIKA system on a DOS diskette, and use this function to convert them while copying them onto the hard disk.

After the conversion, most images will get almost exactly the same temperature read-out as in CATS, but in some rare cases the result might be slightly different partly depending on the fact that some formulae have been improved in ERIKA and on the fact that the digital resolution is different. Some rounding errors might also influence a little on the result.

However, in most cases the differences will be neglectable.

COPY FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Enables the user to copy selected files to another directory or copy them using new file names.

On selecting COPY FILE from the FILE HANDLING menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be copied and the LOCATION and NEW NAME of the file to copy to.

The arrow keys are used to move the text input cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The FROM location can be left as it appears with just a full stop indicating the current directory or a new directory can be typed. The file name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the directories and files in the FROM location. If the NAME field contains wildcards (*, ?) only those selected files will be shown. Selecting a directory and file from the list and clicking the OK button loads this information into the FROM location and name fields.

The TO location and new name fields are completed in the same way as the FROM fields.

The NAME field can contain wildcards enabling more than one file to be copied. File extensions do not need to be defined in the NEW NAME field as these cannot be changed (e.g. an .IMG file retains its extension when copied whether or not its name is changed).

Clicking on the OK button starts the copy action.

If the OVERWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up"position then the write action will be aborted.

The CANCEL button cancels the copy function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the copy file function.

If you copy to a diskette, there will be a warning text "Medium full" when the diskette is full. You can then exchange it for an empty one and the copying process can continue.

COPY SEQUENCE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION: The function extracts images from a .SEQ sequence file.

Use the arrow keys to move the cursor within the field. Use the Delete or Backspace keys to delete the letters to change.

The LOCATION appears with just a full stop indicating the current directory. Enter new directory into the field if you do not wish to remain at the current directory.

The NAME field appears blank. Type the sequence name into the field. The sequence must be a sequence file with extension .SEQ

Clicking on the LIST button brings up a window listing the directories available. Select a directory from the list and click the OK button to load this information into the location field of the dialog panel.

The FIRST and LAST fields are both empty. Type the desired start and end image number of the sequence you want to copy from. Note that the copied images will get the numbers 1, 2 and so on.

The second LOCATION appears with just a full stop indicating the current directory. Enter new directory into the field if you do not wish to remain at the current directory.

The NEW_NAME field appears blank. Type the name of the destination sequence into the field. The sequence must be a sequence file with extension .SEQ.

The OVERWRITE button is pressed if you want to copy to an existing sequence.

The DOS RENAME button is pressed if the target destination is /DOS and you want the system to rename the file if necessary according to DOS file naming rules.

Click the OK button in the dialog panel will copy the specified sequence to the destination sequence.

The CANCEL button cancels the function and removes the dialog panel from the screen.

COPY WINDOW

MENU: System menu - Window handling

OPTIONS:

DESCRIPTION

This function makes a copy of a window. The window you want copied should be in the foreground, not obscured by any other window.

You select the function from the Window handling menu on the screen background. The mouse symbol will then turn into a cross-hair. Move it and click on the window. If you want the whole screen, click on the screen background.

This function is not fast. It can take 10 seconds before the cross-hair appears and another 20 seconds before the new windows displayed.

It shows almost exactly what another window looked like at the time of copy. The functionality of the other window is not copied. Buttons will not respond and menus will not appear.

If the original window was partly placed outside the screen, only the visible part of it is copied.

If the original window was partly obscured by other windows, they will still be obscuring it in the copy.

Due to hardware limitations some window copies will have funny looking data on the rightmost side. Up to three columns on the left side of the copy might be truncated.

CREATE SUBWINDOW

MENU: IR menu - Create subwindow

OPTIONS:
Result table
IR status
Image scanner data
Customer data

DESCRIPTION

Provides the user with further information regarding analysis results and the status of the IR image.

The RESULT TABLE selection from the CREATE SUBWINDOW menu allows the user to recall a result table (for the analysis functions in an IR window) that has previously been removed. More than one Result Table window can be opened for each IR window. This enables the user to view selected results without scrolling.

The IR STATUS selection from the CREATE SUBWINDOW menu brings up a window which lists the status of the following:

Image type:	Temperature or Object signal
Image size:	In pixels
Level and span:	From source/Set by operator
Level:	Value
Span:	Value
OPSC:	From source/Set by operator
Palette:	File name of palette in use
Comment:	From source/Set by operator
Scanner status:	OK/Fault

The CANCEL button removes the IR STATUS window from the screen.

The HELP button brings up a help text window with information on the IR status list.

Selecting IMAGE SCANNER DATA opens a window displaying all the scanner data for the image on screen. The scanner data is stored with the image. The data includes all scanner, lens, filter, range and calibration information.

Customer data is a possibility to show data added to images by the customer. The customer data is a field in the image definition of 100 bytes. The field "custom_data" inside the image could be used in anyway the customer wants.

The ERIKA program makes it "easy" to add own data to images in real time. The customer should then supply the data to add with some sort of program. The program(-s) should update a "mailbox" in its own speed. Latest contents of the "mailbox" are copied into every image distributed when the scanner is the active source.

ERIKA is delivered with a program that can listen to an RS232 port. Data sent here in a special protocol will then be written into customer data.

Details about the format of the data will be displayed on the ERIKA screen by selecting Customer data and then clicking on the Help button. The Help text which comes up can, if a printer is connected, also be printed onto paper.

CREATE WINDOW

MENU: System menu - Create window

OPTIONS:
IR-1
IR-2
IR-1 with set-up
IR-2 with set-up
Analog Clock
Digital clock
Company label
OS9
X demo

DESCRIPTION

Opens the IR, Analog clock, Digital clock, Company label and OS9 shell windows.

The required window is selected with the menu pointer and the mouse button clicked. The corner symbol then appears and can be positioned with the mouse at the required location on the screen (the corner symbol represents the top left corner of the window and the window size is shown in outline). Clicking the mouse button completes the action.

Two selections are available for each IR window as follows:

IR-1, IR-2

When either of these two options is selected the IR window is opened using either the default set-up (if it is being opened for the first time) or the previous set-up selected under IR-1/2 with set-up.

IR-1 with set-up, IR-2 with set-up

When either of these two options is selected a set-up panel appears. The panel is separated into two sections - PRESENTING and TEMPERATURE UNIT.

Two selections are available in the PRESENTING section - TEMPERATURE and OBJECT SIGNAL.

If TEMPERATURE is selected then the units of measurement shown on the scale in the IR window will be those selected in the TEMPERATURE UNIT section of the set-up panel.

If OBJECT SIGNAL is selected then the units of measurement shown on the scale in the IR window will be proportional to the photon radiation after correction for the influence of atmosphere and object emissivity. The temperature unit selected will be used in dialog panels.

One of three temperature ranges can be selected in the TEMPERATURE UNIT section - KELVIN, CELSIUS or FAHRENHEIT.

To select an option in the set-up panel the window pointer is positioned over the button next to the option required and the mouse button clicked. An option is set when the button alongside it appears to have been depressed. The button can be de-selected by clicking on it again.

Once the selections have been made, clicking on the OK button continues the action of opening the IR window using the set-up selected.

The CANCEL button cancels the CREATE WINDOW commend and the IR window is not opened.

The HELP button calls up the on-line Help for the CREATE WINDOW function.

DELETE DIRECTORY FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Deletes a directory at a selected location. **The directory must be empty** - the directory may not contain any sub-directories or files.

Selecting DELETE DIRECTORY FILE from the FILE HANDLING menu brings up a dialog panel requesting the LOCATION and NAME of the directory to be deleted.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed. The directory name is then typed into the NAME field. File extensions are not allowed.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

Clicking on the LIST button brings up a window listing the locations and directories available. Selecting a location from the list and clicking the OK button loads this information into the location field.

Clicking on the OK button deletes the directory or subdirectory selected.

The CANCEL button cancels the function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the delete directory file function.

DELETE FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Deletes a file from a specified location.

Selecting DELETE FILE from the FILE HANDLING menu brings up a dialog panel requesting the LOCATION and NAME of the file to be deleted.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed. The file name is then typed into the NAME field. The NAME field can contain wildcards enabling more than one file to be deleted. File extensions **MUST** be defined.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

Clicking on the LIST button brings up a window listing the locations and files available. In order to list the available files the required file extension (or an asterisk * meaning all files) must be typed into the SELECT field in the LIST dialog panel. Selecting a location and/or file from the list and clicking the OK button loads this information into the relevant field/s.

Clicking on the OK button deletes the file or files selected.

The user is then requested to confirm whether or not the file is to be deleted. This is the default condition with the CONFIRM - ALL FILES button selected (pressed). In case that more than one file is to be deleted then confirmation is requested in each case.

If the CONFIRM - NO CONFIRMATION button is selected (pressed) then the files will be deleted without any requests for confirmation. This option should be used with care.

DIGITAL CLOCK

MENU: System menu - Create window

OPTIONS:

DESCRIPTION

This function opens a digital clock window. This digital clock shows the date and time on two lines in a window. If the date and/or time setting need be changed, use the Set date and time dialog panel.

When you use the Set date and time dialog panel, start by erasing the time to be changed using the Backspace button.

DIRECTORY OF DIRECTORY FILES

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Displays a list of directories or sub-directories at a specified location and allows the user to select a directory at that location.

Selecting DIR. OF DIR. FILES from the FILE HANDLING menu brings up a dialog panel requesting the LOCATION of the directory.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed.

The name of the directory required can then be typed into the SELECT field.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

Clicking on the LIST button brings up a window listing the locations and directory files available. If the SELECT field contained an asterisk then all the available files will be shown. Selecting a location and/or file from the list and clicking the OK button loads this information into the relevant field/s.

Clicking on the OK button changes the location and directory to that selected.

The CANCEL button cancels the function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the directory of directory files function.

DIRECTORY OF FILES

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Displays a list of files in a specified directory.

Selecting DIRECTORY OF FILES from the FILE HANDLING menu brings up a dialog panel requesting the LOCATION of the directory.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed.

The name of the file required can then be typed into the SELECT field.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

Clicking on the LIST button brings up a window listing the locations and files available. If the SELECT field contained an asterisk then all the available files will be shown. Selecting a location and/or file from the list and clicking the OK button loads this information into the relevant field/s.

The FORMAT of the list of files shown can be chosen by clicking on either the NAME or TITLE buttons. With NAME selected the actual file names are displayed in the list, while with TITLE selected a title is displayed for all .IMG files taken from the first 30 characters of the comment relevant to the file. There are also other types of files, which can be stored with a title, e.g. files for storage of an analysis situation. When this function is applied to those files and the TITLE button is selected, then those titles will be displayed as well.

Clicking on the OK button selects the file.

The CANCEL button cancels the function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the directory of files function.

DISPLAY PROCESSING CONTROL

MENU: IR menu - Select source

OPTIONS:

Mirror

Rotate

View

Cliparea

Zoom

Spatial

Median3

Swcopy

Named

DESCRIPTION:

The "Display processing" filters include a number of different operations. Only one of these filters can be used at a time. Apart from the filters with describing names there is also the option NAMED for future additions of filters.

This panel controls the selection of image filters when images are received from the other channel.

The panel consists of two roll choices and a row of buttons. Select a filter with the first roll choice and select filter parameter with the second. Some filters do not have any parameters. Clicking on the SET button will activate the filter in the image source.

The filter selection control panel is terminated by clicking on the QUIT button. Selecting an image source which does not receive images from the other channel will also terminate the filter control panel.

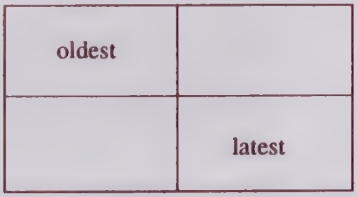
MIRRORING is a function which takes images from one IR channel, transforms them, and shows them in the destination channel.The mirror manipulation filter has one parameter with the options X,Y or XY.

The filter function transforms positions of pixels between inImage and OutImage.

X	gives mirroring in a horizontal mirror
Y	gives mirroring in a vertical mirror
XY	gives mirroring in both vertical and horizontal mirror (=rotate).

The ROTATION filter rotates the image 180 degrees. It has no parameter and it is the same as mirror XY.

The VIEW filter builds up a new image with reduced copies of 4 (9 or 16) images shown together, like this (4 images):



When started, the filter copies the current image of the input channel. When more images arrive, they will be put beside the previous images, rightwards and downwards, as long as there is room for them. After that, the new images will be shifted in at the bottom right corner pushing the older images to the left.

The IR window will resize itself a number of times, before all images have been shown and the copies are reduced by a factor 2, 3, or 4 to fit into the window size.

The temperatures, colours and time etc.of the created image will be those of the most recent image, which is marked with a red frame. If you measure in the created image and go outside this frame, the object used parameters might be irrelevant.

CLIPAREA provides a means to delete noisy temperature levels from the image. It uses the borders of the areas activated in the source channel to cut away parts of the displayed image. The option INCL leaves unchanged only pixels inside the areas whereas EXCL leaves unchanged only pixels outside the areas

ZOOM blows up the part of an image which is inside area AR01, which must be a box.If AR01 is not defined, it will be created when "zoom" is started. If AR01 is defined as an area it will be redefined to a box.

The result image has an image size limited by max width and height, not necessarily the same proportions as in the source image, but the magnification is the same in the x- and y-directions. The resulting image size will change correspondingly.

The zoom manipulation filter has parameter PIXMAGN or INTERPOL.

PIXMAGN will only magnify pixels to the result image INTERPOL will magnify and interpolate pixels to result image SPATIAL filtering can be used to smoothen or to amplify variations in images using different filter matrixes.

The idea is to multiply every pixel and its neighbour pixels by a filter matrix. The resulting pixel values are normalised.

Matrixes should be of dimension 1,3,5 or 7, and need not be square. (1 x 3 is possible). Normally 3x3 matrixes are used. The bigger the matrix, the more calculation time is required for an image.

The filter parameter is the name of the matrix file.

The system is delivered with 6 predefined matrix files:

"LOW" - low pass filter (smoothing)

"HIGH" - high pass filter (crispening)

"MATRIX1 - MATRIX4" - These default matrices can be edited by the user.

The matrix files are text files. They may contain comments starting with "#". The matrix files are found under /h0/ASYS/LIB). The files have the extension ".SPA".

The matrix elements should be given as decimal values(positive or negative integers) delimited by space and new lines.

Example of a matrix file:

```
! #$ Spatial matrix: 3 x 3 test
! #*.SPA Version 1
! 1 1 1
! 0 2 0
! -1 -1 -1
```

If the sum of the values in the matrix is zero, a difference image will be created. Otherwise a normalized ordinary image is created.

It is possible to edit file "/h0/ASYS/LIB/FILTER_B.SYS" (control file for "Display proc control") if own matrixes are created and should be made permanent under their own name.

MEDIAN3 is a filter which smoothens an image. Every pixel in the resulting image will be the median value of the closest neighbours in the source image (3x3 square with current pixel in the middle).

SWCOPY carries out the same things as SHOW OTHERCHAN but is software controlled. Hence it runs in 'software' time rather than the full real time of Show otherchan.

NAMED will produce a question panel, where the LOCATION and NAME of the wanted filter is to be written.

This is the normal entry for customized filters. In order to see whether there are any such filters in the system, select System menu - Equipment - Installed options

See also: Rotate image in the Scanner menu

DOS CONVERT FILE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION

In the dialog panel the following rules apply to the various lines.

Location: No wild cards, i.e. * or ?, can be used.

Name: The name can have wild cards. The following examples show some 'good' name indications:

Imagename.img can only be 'imagename.img'
Image*.img means e.g. Image1.img, image2.img etc
?????name.* imagename.abc mnopqname.czf etc

Hence a ? replaces any letter or digit but not a space. The * replaces anything.

A point (.) in the 'location' means the location indicated on top of the screen, e.g. /H0/USR/ERIKA. The point is the default in the location when this dialog panel is opened.

A great number of file types will be identified by the file name extension. When the file type is known, a conversion will always be made. If the file type is unknown, the file will be treated as an ASCII-file, provided the 'convert unknown files to'option is selected.The conversion direction can be selected:

'Convert to DOS-format' or
'Convert to OS9-format'

In order to copy from OS9 to DOS there must be a DOS formated output medium available, e.g. a diskette. The location of the diskette is then /DOS.

Be prepared, for the conversion to take some time.

Clicking on the LIST button brings up a window listing the directories and files in the given location. If the NAME field contains wildcards (*,?)only those selected files will be shown. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields.

Clicking on the OK button starts the copy action.

If the OVERWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up" position then the write action will be aborted.

The CANCEL button cancels the convert function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the DOS convert function.

DOS COPY FILE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION

In the dialog panel the following rules apply to the various lines. For the 'Copy from' Location: No wild cards, i.e. * or ?, can be used.

Name: The name can have wild cards. The following examples show some 'good' name indications:

Imagename.img Can only be 'imagename.img'
Image*.img means e.g. Image1.img, image2.img etc ?????name.* imagename.abc mnopqname.czf etc

Hence a ? replaces any letter or digit but not a space.The * replaces anything.

A wild card in the 'from' name excludes any name indication in the 'to' name.

For the 'Copy to':

The 'to'-location and 'to'-name cannot be empty simultaneously.

There must never be any wild cards in the 'to'-name.

A point (.) in the 'location' means the location indicated on top of the screen, e.g. /H0/USR/ERIKA. The point is default in the location when this dialog panel is opened.

If no 'to'-name is given, the 'to'-file will get the same name as the 'from'-file.

If there is a wild card (* or ?) the 'to'-names will be the same as the 'from'-names. The locations should, of course, be different.

If the 'to'-file already exists, the overwrite file option can be selected.

An OS9-file name can contain up to 29 characters, but in DOS, a file name only can contain 8+3 characters. If the DOS -rename option is selected, files will be renamed automatically during copy.

A great number of file types will be identified by the file name extension. When the file type is known, a conversion will always be made. If the file type is unknown, the file will be treated as an ASCII-file, if the 'convert unknown files to'option is selected.

The conversion direction can be selected:
'Convert to DOS-format' or
'Convert to OS9-format'

In order to copy from OS9 to DOS there must be a DOS formated output medium available, e.g. a diskette. The location of the diskette is then /DOS.

Be prepared, for the conversion to take some time.

Clicking on the LIST button brings up a window listing the directories and files in the given location. If the NAME field contains wildcards (*,?) only those selected files will be shown. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields.

Clicking on the OK button starts the copy action.

If the OVEWRWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up" position then the write action will be aborted.

The CANCEL button cancels the convert function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the DOS convert function.

DUMP

MENU: Area menu

OPTIONS:

DESCRIPTION: The "dump area" function writes values of all pixels inside the selected box area to file. Pixels are dumped as ASCII text in the current temperature unit.

Columns are separated with TAB, rows are separated with NEWLINE. It is possible to read an area dump file into "Excel" on a PC for further analysis.

The LOCATION is indicated by a full stop. See the top line for the location name. If necessary, change the location.

The file name should be typed into the NAME field.

The extension of dump files is ".DMP".

Clicking on the LIST button brings up a window listing the locations and files available. Upon clicking on OK the information is loaded into the location and name fields.

Click on OK to dump area contents to file.

DUMP TO FILE

MENU: System menu - Window handling

OPTIONS:

DESCRIPTION

The screen dump function generates a disk file containing a binary copy of one or all screen windows. Several generally accepted PC file formats are available.

The following formats are available: GIF, PCX and TIFF.

The window you want dumped should be in the foreground, not obscured by any other window.

You select the function from the Window handling menu on the screen background. Then a dialog panel comes up allowing you to fill in the file name and location and select the file format. You have to state if you want to point out the interesting window yourself or have the IR 1 or IR 2 image (only) dumped.

If you decided to point to a window, the mouse symbol will turn into a cross-hair. Move it and click on the window. If you want the whole screen, click on the screen background.

If the OVERWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up" position then the write action will be aborted.

This function takes time. It may take 10 seconds before the cross-hair appears. Dumping an entire screen to floppy disk takes up to 2 minutes.

Due to hardware limitations up to three columns on the left side of the window dump might be truncated. Therefore try to avoid putting the window to be dumped to the extreme right. Dialog panels, icons and some menus cannot be dumped. Clicking on the OK button starts the copy action.

Clicking on the LIST button brings up a window listing the directories and files in the given location. If the NAME field contains wildcards (*,?) only those selected

files will be shown. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields.

The CANCEL button cancels the convert function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the DOS convert function.

DUMP IMAGE FILE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION

The dump image window displays the contents of an image file except for the image itself. The window is made scrollable. The scrolling is controlled by the scroll bar on the left side of the window.

An abbreviated description of the image file can be found in the Appendix to the Software Reference Manual.

Scrolling is done by clicking with the right and left mouse buttons on the scroll bar.

It is also possible to resize the dump image window to better view the image data.

The window is removed by clicking on the QUIT button.

The PRINT button will send the image data to the printer port.

EDIT TEXT FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Enables any text file to be edited.

Selecting EDIT TEXT FILE from the FILE HANDLING menu brings up a dialog panel requesting the LOCATION and NAME of the file to be edited.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed. The file name is then typed into the NAME field.

The arrow keys are used to move the cursor within the fields and between fields.

Clicking on the LIST button brings up a window listing the directories and files available. In order to list the available files the required file extension (or an asterisk * meaning all files) must be typed into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields.

Clicking on the OK button selects the file.

A new window opens showing the contents of the file selected. Text can be input or edited using the following keys and commands:

Insert	Toggles between Insert and Overwrite modes. When Insert mode is on characters are inserted under the cursor and the original text moves to the right. When Overwrite mode is on the character under the cursor is replaced with the character typed.
Delete	In Insert mode the character under the cursor is erased and the characters to the right of the cursor move to the left. In Overwrite mode the character under the cursor is replaced with a blank and the cursor moves to the right.

Backspace	In Insert mode the character to the left of the cursor is erased and the characters to the right of the cursor move to the left. In Overwrite mode the character to the left of the cursor is replaced with a blank and the cursor moves to the left.
Home	Moves the cursor to the beginning of the line.
End	Moves the cursor to the last character of the line.
PageUp	The preceding page is moved into the window.
PageDn	The next page is moved into the window.
Return	Inserts a line feed at the position of the cursor. All characters to the right of the cursor and the character under the cursor are moved to a new line.
Left Arrow	Cursor is moved one character to the left.
Right Arrow	Cursor is moved one character to the right.
Down arrow	Cursor is moved to the corresponding character in the line below or to the line end.
Up arrow	Cursor is moved to the corresponding character in the line above or to the line end.
Ctrl + Home	In Insert mode all the characters from the beginning of the line to the cursor are erased. In Overwrite mode all the characters from the beginning of the line to the cursor are replaced with blanks.
Ctrl + End	In Insert mode all the characters from the cursor to the end of the line are erased. In Overwrite mode all the characters from the cursor to the end of the line are replaced with blanks are replaced with blanks.
Ctrl + PageUp	The cursor is moved to the first character of the first line.
Ctrl + PageDn	The cursor is moved to the last character of the last line.

The CANCEL button cancels the function and removes the editing window from the screen without saving any changes made.

The HELP button brings up a help text window with information on the edit text file function.

EQUIPMENT

MENU: System Menu - Equipment

OPTIONS:
Format floppy disk
System fitness
Set printer port
Set date and time
Set background
Screen saver on
Screen saver off
Interlace on
Interlace off
Show ERIKA version
Installed options

DESCRIPTION:

Enables the user to format a floppy disk, download calibration files to the scanner, check the status of scanners and system, set the screen mode for TV output, set up printer ports and view installed options, if any.

For an explanation of the various options available from this menu refer to the individual function descriptions.

ETHERNET INFORMATION

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION

The system Ethernet number is fixed and cannot be modified.

Changing the ERIKA Internet number and node name:

1. Select "Create window" and then "OS9" from the main menu.
2. Enter "set_IP_number aaa.bbb.ccc.ddd" where the four groups of numbers identify the Internet number.
3. Make the new Internet number known to ERIKA as described below.
4. Power OFF/ON the system.

Making other (and own) Ethernet installations known to ERIKA:

1. Change current location to /H0/ETC
2. Select "File handling" and then "Edit text file" from the main menu.
3. Enter file name: HOSTS. The edit[illegible]splays the system HOSTS table which define[illegible] network nodes reachable from this installat[illegible]. Each definition has the format:

Internet number	Node	Name
aaa.bbb.ccc.ddd	<name>	[<additional name>]

4. Append the IP number and the node name of all network nodes you wish to reach from ERIKA
5. Press OK to complete the editing
6. Select "Create window" and then "OS9" from the main menu
7. Enter chd /H0/ETC
8. Enter idbgen -x
9. Power OFF/ON the system

Having the system controller connected to an ethernet network gives you the possibility of transferring text files and binary files to and from other network nodes, using the ftp program, and to log in to and receive logins from other network nodes, using the telnet program.

The QUIT button removes the status panel from the screen.

FILE HANDLING

MENU: System menu - File handling

OPTIONS:
Set location
Directory of files
Copy file
Rename file
Move file
Delete file
Dir. of dir. files
Make directory file
Delete directory file
Print file
Edit text file

DESCRIPTION

Enables operations to be performed on the various directories, sub-directories and files of the ERIKA system.

For an explanation of the various options available from this menu refer to the individual function descriptions as listed in Options.

FILE TRANSFER

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION

This utility is used to transfer files to and from remote systems via ethernet. There are many FTP commands to facilitate file transfer between systems.

FTP is the user interface to the ARPANET standard File Transfer Protocol. FTP transfers files to and from a remote network site.

Selecting the file transfer function in ERIKA brings up a window with a FTP command interpreter. A current status report is displayed of the FTP modes. FTP now awaits instructions from the user. When FTP is awaiting commands it displays the prompt "ftp>". Initially, no connection is established to any remote system. Enter "connect <host-name>" or "connect ###.###.###.###" to establish a connection to an FTP server on the remote host.

The hashmarks symbolize an internet number. You can enter a host name instead of the hashmarks, if it is present in the file /h0/ETC/HOSTS.Enter "help" to get a list of available commands. Enter "help [<command-name>]" to get a help message about a specified command.Note that you can issue OS9 commands (like dir -e) on the system controller using the $-command. You can change the current directory on the system controller using the lcd-command.

Note the distinction between ascii and binary transfer: Text files may have different linefeed markers on the remote system and on the system controller. When ascii mode is used, the linefeed markers are converted to suit the conversions of the system receiving the file. Binary mode transfers the file exactly as it is.

Note that image files contain information stored in integer and floating point formats. These formats differ, depending on the architecture of the computer used.

For more information on this, see the help concerning DOS-handling.

Terminate FTP session and exit with "quit".

If you use ftp on a remote computer, and want to log in to this system controller, enter

Name: erika
Password: a

FORMAT FLOPPY DISK

MENU: System menu - Equipment

OPTIONS:

DESCRIPTION

The format utility is used to physically intialize, verify and establish an initial file structure on a disk. All disks must be formatted before they can be used on an OS-9 system.

Format reads a description of the disk from the device descriptor module. Default values for the number of sides, number of tracks, sector size and density are determined by the values in the descriptor.

The format function in ERIKA prompts you to enter a floppy disk in the floppy driver. Press return and the format program will start. The format function will also prompt you for a disk name. The maximum length of the name is 32 characters.

The function can be aborted by pressing Control-C.

The question Format another (Y/N) will either allow you to format another diskette or to leave the FORMAT FLOPPY function.

FREEZE

MENU: IR window - Freeze button
Keyboard - Frz 1, Frz 2

OPTIONS:

DESCRIPTION

Freezes the IR image at the moment the button or key is selected. The IR window button changes to read UNFREEZE.

The function can be selected and de-selected from the IR window and/or the keyboard, i.e. the image can be frozen by clicking on the IR window button, unfrozen by pressing the relevant key on the keyboard and vice versa.

FROM SOURCE

MENU:

IR menu - Image base time menu
System menu - Image comment
Scale menu - Object parameter scaling
- Level and span
- Offset correction

OPTIONS:

DESCRIPTION

From Source means that the above mentioned data, i.e.
Image base time
Image comment
Object parameter scaling,
Level and span and
Offset correction,
all of which form part of the image data, will be fetched from the original image displayed. This command has no effect if the image source is "scanner".

If the image source is "Recall image" etc. then the mentioned data may be changed at display time, i.e. change of level and span.

Selection of "From source" will reset the data to the values in the stored image.

If applied to the Image base time it will let variations in the base time of stored images pass through into the system.

If the source is a stored image, this image has once been stored with a set of the above mentioned data. These data will be used when the stored image is displayed.

Another possibility is Keep current (see this keyword in the manual) where e.g. the image comment can be fetched from an image comment window on the screen.

FUNCTION KEYS

MENU:

OPTIONS: F7
Shift/F7

DESCRIPTION

Pressing the F7 button will push the upper window down under all other windows. This can be repeated over and over again until all windows have been rotated.

Shift/F7 will circulate the window front, which means that the bottom window is pushed front.

FRONT

MENU:

Area menu
Clock menu
Company label menu
Icon menu
Line menu
Spot menu
System menu - Window handling
Window menu

OPTIONS:

DESCRIPTION

Moves the selected window or analysis function in front of all other windows or functions.

When FRONT is selected from the WINDOW HANDLING menu the pointer changes to a black spot which must be placed within the boundary of the window to be moved to the front. The mouse button is then clicked and the window moves to the front.

When FRONT is selected from a WINDOW menu or the CLOCK menu then the window immediately moves to the front.

FRONT can also be selected from the AREA, LINE or SPOT menus. Position the window pointer on the analysis function flag, e.g. ARO1, ARO2, LI01 etc., and click the mouse button. The menu opens and FRONT can then be selected. The selected analysis function immediately moves in front of the other functions.

A window can also be moved to the front by positioning the pointer in the window title bar and clicking the **right** mouse button.

GREY PALETTES

MENU: Scale menu

OPTIONS:
Grey cont
Grey cont inv
Grey 16
Grey 16 inv
Grey 10
Grey 10 inv
Grey 5
Grey 5 inv
Black

DESCRIPTION

Enables the user to choose the grey scale range used in the image.

GREY CONT and GREY CONT INV are continuous grey scale palettes using 112 levels.

Sixteen, ten or five levels of grey can be selected. INV indicates that the scale is inverted.

Selecting BLACK sets the complete measurement range displayed in the image to black.

HELP

MENU: All menus

OPTIONS:

Help facilities
How to get started
Predefined keyboard keys
Mouse usage
Rotary knob usage
Window handling
Menu tree usage
Dialog panel editing
Text editing
Topics list

DESCRIPTION

Provides on-line, on-screen help on a variety of subjects. Help is available directly as an option from any of the menus listed above and can also be accessed from dialog panels by clicking on the HELP button.

All help texts are displayed in a separate window. Click on the TOPICS button to view a list of topics. Click on a topic in this list and a fu[illegible]list of related Help texts appears. Click on the spec[illegible]p text title in this list to view the text. Click on INDEX to view an alphabetical list of all the Help texts. Click on the Help text title to view the text.

Other texts can be selected by clicking on the relevant text within the window. The various subjects chosen are presented in a text field at the bottom of the window. By using the + and — buttons the operator can scroll through the list of texts that have been presented and reselect the required help text by clicking on the SHOW button.

The following help texts are available directly from the SYSTEM menu in the background:

Help facilities:	Provides the user with an index of the help texts available.
How to get started:	Presents a short description of the actions necessary to start-up the system and obtain an IR image on the screen.
Predefined keyboard keys:	Describes the functions and usage of the predefined function keys.
Mouse usage:	Describes how to use the mouse and the mouse buttons.
Rotary knob usage:	Describes the usage of the rotary knob and level and span keys.
Window handling:	Describes the facilities available for handling windows on the screen, e.g. **MOVE, RESIZE,** etc..
Menu tree structure:	Displays an overview of the menu tree.
Dialog panel editing:	Describes the actions necessary within dialog panels.
Text editing:	Describes the text editing facilities and functions.
Topics list:	Provides a list of all subjects for which help is available.

IMAGE BASE TIME

MENU: IR menu

OPTIONS: Set base

Keep current

From source

DESCRIPTION:

Erika is equipped with facilities for absolute and relative presentation of the time of image creation. The point of zero of this relative time is determined by the "set base time" function and is called the current base time.

The relative time is presented as -12:34:56.78 or +12:34:56.78 depending on if the current image was captured before or after the current base time. Values up to +/- 100 hours can be shown.

Normally, the base time is set by external or keyboard trigs when images are captured. It is stored with the images for further study. It can, of course, also be set to a specified time.

The relative time of creation can during image capture or retrieval be presented instead of the absolute time in the IR window, the IR results window and the plot window. Click on the time line of the IR window, the presentation unit line of the result window and in the middle of the plot window to get menus from which relative time can be selected.

The base time can be changed during image retrieval in the same ways that it could be set during capture. You can also take the capture time of one of the images of a sequence and make it become the new base time for that sequence. The letters BT will appear on the time line of the IR window to indicate that the current base time is not the one that was stored with the images.

In fact, all scanner images will be given a base time even if you do not try to give them one. The base time will be the time when you last selected the scanner as your IR source.

If you recall old images, that do not have any base time, the relative time will be presented as —:—:—.— except for in the plot window, which will use the time of the first image it receives as its own private base time.

IMAGE COMMENT

MENU: IR menu - Image comment
The title line in the IR image

OPTIONS: Edit
Store
Recall
Keep current
From source

DESCRIPTION

Enables the user to display scanner and image data, and to edit and store comments with the images or sequences.

EDIT allows the user to edit the comment related to the image or sequence on screen. A comment can also be added to an image or sequence. The comment added or edited is temporary and will be lost if the image is removed. To keep the comment with the image it must be stored.

STORE allows the user to store comments with images or sequences. The comment is stored in a separate file that is referenced directly within the image file. On selecting STORE a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be created. The arrow keys are used to move the cursor within the dialog panel fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The LOCATION can be left as it appears with just a full stop indicating the current directory or a new directory can be typed in. The file name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the directories and files available. In order to list the available files the required file extension (or an asterisk * meaning all files) must be typed into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields in the STORE dialog panel.

Clicking on the OK button starts the store action.

If the OVERWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up" position then the write action will be aborted.

The CANCEL button cancels the store comment function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the store comment function.

RECALL allows the user to open a comment file which is then used as the temporary comment for the image or sequence displayed. On selecting the function a dialog panel appears asking for the LOCATION and NAME of the file to be opened. The file is selected in the same way as described above for the STORE function.

KEEP COMMENT allows the operator to use the current comment as a temporary default comment for all successive images.

FROM SOURCE recalls the original comment stored with the image file.

C appears in the status section of the IR window when the comment is not from the source.

INSTALLED OPTIONS

MENU: System menu - Equipment

OPTIONS:

DESCRIPTION

Clicking on the function will bring up a file listing window where the installed options, if any, will be listed.

INTERLACE ON/OFF

MENU: System menu - Equipment

OPTIONS:

DESCRIPTION

There is a light emitting diode indicating the TV interlace state.

- VGA — Shining green when the video output is of VGA type, not shining if TV-interlace is on.

The way to switch between having TV-interlace off and on is to use the equipment menu on the screen background. The status diode called VGA on the front panel of the system controller shows the current state of the TV interlace.

TV interlace should be OFF when a VGA monitor is used, otherwise the screen will flicker.

TV interlace should be ON when a TV monitor is used. A TV monitor should be connected to the Video out contact on the rear side of the Systems Controller.

TV interlace is OFF by default.

ISOTHERM HANDLING

MENU: IR menu - Analyse image - Isotherm handling
ISO1 and ISO2 buttons at the rotary knob

OPTIONS: Highlight above
Highlight below
Highlight interval

DESCRIPTION

Enables two separate isotherms to be displayed in each IR window.

Selecting ISOTHERM HANDLING from the ANALYSE IMAGE menu brings up a dialog panel with the isotherm selection options. Each isotherm has three selectable options. The user can choose to highlight all parts of the image with a temperature higher than a set value, lower than a set value or a span of temperatures below a set value.

To highlight all parts with a temperature higher than a specific value, the specific value is entered in the text field ISOTHERM VALUE and then the button HIGHLIGHT ABOVE is clicked on. The button is then "latched" in the down position and any other selection is cancelled.

To highlight all parts with a temperature below a specific value, the value is entered into the text field ISOTHERM VALUE and the button HIGHLIGHT BELOW is clicked on. The button is then "latched" in the down position and any other selection is cancelled.

To highlight parts of a specific temperature, a value must first be entered in the text field ISOTHERM VALUE and then the button HIGHLIGHT INTERVAL is clicked on. An interval value (span) must be entered in the text field alongside the HIGHLIGHT INTERVAL button. Selecting Highlight Interval cancels any other selection.

Click on the ON button for the selected isotherm/s.

Clicking on OK completes the action of setting the isotherms.

Isotherms 1 and 2 highlight the selected temperatures in different colours (dependent on the palette chosen). Their positions are graphically displayed in the level and span bar below the image. Correspondingly there are two lines opened below the image with a colour box and information about the highlighted temperature and the temperature width of the isotherm. Isotherm 2 has graphical priority over Isotherm 1.

The ISOTHERM VALUE can be changed without re-entering the ISOTHERM HANDLING function by using the ISO1/ISO2 keys and rotary knob. With ISO1 or ISO2 selected (indicate by an LED in the key) the level of the isotherm value can be altered with the rotary knob. If HIGHLIGHT INTERVAL has been selected the user can toggle between the isotherm value and the span of temperatures for that isotherm by repeated ISO1/ISO2 key selections.

The isotherms are removed by re-entering the ISOTHERM HANDLING function and setting the two dialog panel ON/OFF switches to OFF. The REMOVE ANALYSIS function in the ANALYSE IMAGE menu does **not** remove the isotherms.

By clicking on the respective coloured boxes for the isotherms, a pop-up menu with the single choice Remove will be displayed. Clicking on Remove will remove the isotherm in question.

KEEP CURRENT

MENU: IR menu - Image base time menu

OPTIONS:

DESCRIPTION

This function "freezes" the current base time.

By selecting this function further changes in the base time of stored images are prevented from penetrating into the system.

KERMIT - FILE TRANSFER AND TERMINAL EMULATION

MENU: Works out from the OS9 window

OPTIONS:

DESCRIPTION:

This utility is used when you have connected a remote computer to a serial port. You can either transfer files to and from the remote system or just log in to and issue commands on the remote system.

KERMIT operates in one of two modes, local or remote mode. The local mode runs on the computer at which you sit and type your commands. The remote mode runs on "the other" computer with which you interact through the serial port. The Erika controller can be either the local computer or a remote one, depending on your application.

In order to simplify the description, let's assume that we wish to communicate between two Erika controllers through the serial ports. From this you can easily deduce what to do in case one of the computers involved is not an Erika controller.

First, prepare an RS232 cable and connect it between the RS232C 2 port of the controller at which you wish to sit and the RS232C 1 port of the other.

If you have got a pair of modems on the connection, more sophisticated cables will have to be used. They have to simulate some of the RS232C signals. Do not expect the DIAL facilities of KERMIT to work.

Secondly, open an OS9-window (from the Create Window menu of the screen background) and run KERMIT, for instance like this:

@ERIKA>KERMIT

C-Kermit, 4E(072) (and so on)

Type ? for help.

C-Kermit>set line /t1

C-Kermit>set speed 9600

/t1: 9600 baud

C-Kermit>connect

Connecting thru /t1 9600 baud.

The escape character is CTRL-\

Type the escape character followed by C to get back, or followed by ? to see other options.

Do not use any other speed than 9600 baud when connecting to the RS232 C port 1.

Now you can hit the Carriage Return key and log in to the other controller like this:

User name?: erika

Password: a

Now you can issue any OS-9 command on the other controller. The OS-9 command "monitor" even enables you to issue the commands of the Erika language.

Before discussing how to transfer files with KERMIT, let's just go through the disconnection procedure.

ERIKA>logout

Logout after X minutes Y seconds.

Now hit CTRL and \ at the same time, followed by C.

[Back at Local System]

C-KERMIT>quit

@ERIKA>logout

Then the OS-9 window vanishes.

When files are to be transferred, one has to run a KERMIT program at each end of the connection. To start KERMIT on the remote computer, just type:

@ERIKA>KERMIT

C-Kermit, 4E(072) (and so on)

Type ? for help.

C-Kermit>server

C-Kermit server starting. Return to your local machine by typing its Escape sequence (and so on)

Now hit CTRL and \ at the same time, followed by C.

[Back at Local System]

C-KERMIT>

In order to investigate what files to transfer, there are some commands you should be aware of:

Function	Local computer	Remote computer
Change working directory	cd <dirname>	remote cd <dirname> *)
Show directory <dirname>	dir <dirname>	remote dir
Free space	space	remote space
Show text file	! list <filename>	remote type <filename>

*) You may be asked to fill in a password afterwards.

There are two types of file transfer: binary and text transfer.

Always remember to use binary transfer when transferring binary files such as Erika images.

Note that image files contain information stored in integer and floating point formats. These formats differ, depending on the architecture of the computer used, For more information on this, see the help concerning DOS-handling.

The text transfer is more complicated (and thus slower) due to the requirements for special treatment of line termination codes. Some computer types use LF, others CR and some CRLF to separate lines. Be sure to use text transfer when transferring text files between different types of computers. Text transfer is the default mode.

The commands to change between binary and text transfer are:

set file type binary set file type text

When transferring files to IBM PC:s and similar computers, mind their file name conventions (max 11 characters including extension).

Here is an example on the sending of an image file:

[Back at Local System]

C-KERMIT>set file type binary

C-KERMIT>dir *.img

ABC_0001.IMG ABC_0002.IMG

C-KERMIT>send *.img

SF

ABC_0001.IMG => ABC_0001.IMG, size 79014

CTRL-F to cancel file, CTRL-R to resend packet,

CTRL-B to cancel batch, CTRL-A for status report.

.....

.....[OK]

SF

ABC_0002.IMG => ABC_0002.IMG, size 79014

.....

.....[OK]

C-KERMIT>bye

C-KERMIT>quit

@ERIKA>logout

In order to fetch files, use the command get.

The bye command will stop the server from running on the remote computer and log off from that computer.

You can also use an !-command to stop the window from scrolling past the bottom line (using "! tmode pause") and to enable full scrolling again (using "! tmode nopause").

LEVEL AND SPAN

MENU: Keyboard - Level/span keys, Rotary knob
Scale menu - Level and span

OPTIONS: Set
Set via scale
Auto adjust
Keep current
From source

DESCRIPTION

The level and span of the image in either IR window can be adjusted by using the LEVEL and SPAN keys in conjunction with the rotary knob. The active IR window is indicated by the LEDs in the panel above the rotary knob. The selected function, level or span, is indicated by an LED in the key.

Selecting SPAN enables the user to adjust, with the rotary knob, the width of the image temperatures displayed about a centre value (LEVEL). Clockwise rotation increases the width, counter-clockwise reduces it.

Selecting LEVEL enables the user to adjust the centre temperature value displayed. Clockwise rotation of the rotary knob raises the centre temperature value, counter-clockwise lowers it. By using the level and span adjustments the image temperatures displayed can be optimized.

Selecting LEVEL AND SPAN from the SCALE menu allows the operator to select and set temporary default values of level and span that are used for all subsequent images.

Selecting SET brings up a small dialog panel where the upper and lower limits of the image scale are displayed. These limits can be edited and by clicking on the OK button are entered as the new level and span values.

Selecting SET VIA SCALE brings up a small dialog panel where the upper and lower limits of the image scale are displayed in the same units as used in the scale menu. These limits can be edited and on clicking on the OK

button are entered as the new level and span values.

Selecting AUTO ADJUST sets the upper and lower scale limits automatically to the value, which is displayed in the dialog panel. This value comes from the source of the image being displayed. These values are then kept as the default.

The starting default value is 100 %. Possible values range from 20 to 200 %.

Selecting KEEP CURRENT sets the upper and lower scale limits to those currently set for the image being displayed. These values are then kept as the default.

Selecting FROM SOURCE resets the level and span values to those of the source of the image.

LS appears in the status section of the IR window when the level and span settings are not from the source.

MAKE DIRECTORY FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Creates a directory or sub-directory at the specified location.

Selecting MAKE DIRECTORY FILE from the EQUIPMENT menu brings up a dialog panel requesting the LOCATION and NAME of the new directory.

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed. The directory name is then typed into the NAME field. File extensions are not allowed.

The arrow keys are used to move between fields.

Clicking on the LIST button brings up a window listing the locations and directories available. Selecting a location from the list and clicking the OK button loads this information into the location field.

Clicking on the OK button creates a new directory or subdirectory either at the current location or location selected.

The CANCEL button cancels the function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the make directory file function.

MO DISK AND BERNOULLI DISK

MENU: Function to be executed in an OS9 window

OPTIONS:

DESCRIPTION:

Both the Bernouilli disk and the MO (Magnet-Optical) disk are treated as additional hard disks, called /H1 or /H2.

The description hereinafter describes how to install and format them.

Input the B side up of the MO disk.

Open an OS9 window and login as super, password AGEMA. "Test" the MO disk with the OS9 command dcheck /h1 (if the MO disk is installed with SCSI address 1). Check that the led twinkles on the MO disk and note the size of the MO disk.

Edit the /h0/usr/erika/.agwmrc file to enable the formatting of the hard disks /h1 and /h2. Usually you only need to remove a # in the beginning of some lines in the submenu Equipment of the System menu. Be extremely careful when you edit .agwmrc!

Re-read .agwmrc. The command is found in the top line menu. Format the A and B sides of the MO disk (/H1).

Edit the environment variable DEVICES in the /h0/usr/erika/.login file, add e.g. /H1:/H2: in the list of devices or whatever applicable if you have one or two devices connected. This will make the extra devices visible in the "list panel" function of all ERIKA file commands. Reboot the system to activate the change.

The Bernouilli disk is available in 90 Mbyte or 150 Mbyte capacities (1993) . It is preformated but needs be formated in the way described above. It is adviced to boot the system first and only when the booting procedure is finished, then switch on the Bernouilli disk. When trying

to operate towards the disk for the first time, it usually says that it cannot find it. However, try once more and it will work.

The same happens when you change disks.

The Bernouilli disks can retrieve images at a rate of about 2 images/second.

MOTOR POWER OFF

MENU: System menu - Scanner

OPTIONS:

DESCRIPTION

Clicking on any of the lines will stop the corresponding scanner motor. This is also possible in the Scanner control window.

MOVE

MENU:

Icon menu
System menu - Window handling
Area menu
Clock menu
Line menu
Spot menu
Window menu
Company label menu

OPTIONS:

DESCRIPTION

Enables the selected window or analysis function to be moved to a different screen or image location.

When MOVE is selected from the WINDOW HANDLING menu the pointer changes to the MOVE symbol which must be placed within the boundary of the window or icon to be moved. The mouse button is then pressed and the window can be dragged to a different location on the screen.

When MOVE is selected from a WINDOW menu, an ICON menu or the CLOCK menu then the window pointer changes to the MOVE symbol and the window may then be dragged to the new location.

MOVE can also be selected from the AREA, LINE or SPOT menus. The window pointer is positioned on the analysis function marker, e.g. ARO1, ARO2, LI01 etc., and the mouse button clicked. The menu opens and MOVE can be selected. The selected analysis function is then moved to a new position in the IR image by clicking on any point close to the spot, line or area and dragging. Clicking on the OK button completes the move operation.

A window can also be moved by positioning the pointer in the window title bar and pressing the **right** mouse button. The window is then dragged to the new location and automatically moves to the front.

MOVE FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Moves one or more selected files from the specified location to another location.

On selecting MOVE FILE from the FILE HANDLING menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be moved and the LOCATION to move the file to.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The FROM location can be left as it appears with just a full stop indicating the current directory or a new directory can be typed. The file name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the directories and files in the FROM location. If the NAME field contains wildcards (*, ?) only those selected files will be shown. Selecting a directory and file from the list and clicking the OK button loads this information into the FROM location and name fields.

The TO location field is completed in the same way as the FROM location field. The TO name field cannot contain wildcards and must be left blank if the FROM name field contains wildcards.

Clicking on the OK button starts the move action.

The CANCEL button cancels the copy function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the move file function.

These analysis object parameter sets are called OP + the name of the analysis function to which they belong, for instance OPSP01 for the object parameter set for Spotmeter 1, OPAR05, OPLI13 etc.

You can create an OPSP01 by clicking on Edit in the "Obj Par" submenu of the Symbol menu of SP01. This will lead you to a dialog panel in which the current values for SP01 are shown.

They are those of OPSC, before OPSP01 is created. Change some values and press OK. The values in the result window will be recalculated.

The same Symbol menu offers you the possibility to store and recall object parameters on/from disk.

When you want to store/recall an object parameter set, select Store/Recall from the menu.

The first line to be filled out is the Title line. This line can take 30 characters of comment to this object parameter set.

The current LOCATION is indicated by a full stop. See the top line for the location name. If necessary, change the location. The object parameter set name is to be typed into the NAME field.

Clicking on the LIST button brings up a window listing the locations and files available. Upon clicking on OK the information is loaded into the location and name fields.

Click on OK to store the object parameters. If the new object parameter set is to be stored under an already existing name, there will be a warning message and you will have to click on the "OVERWRITE EXISTING FILE" button. Be careful!

The CANCEL button cancels the function without storing any object parameters. The dialog panel is removed from the screen.

The menu also contains the selections "Use OPSC" which makes the function use OPSC again, "Keep current" which makes the current values (perhaps OPSC) become a new OPSP01 "Use other" which makes the function use some other object parameter set, for instance OPLI07.

The analysis object parameter sets are independent of images. They can be bound to OPSC, which may vary with the images. They can also be bound to each other. That is very convenient when a group of analysis functions all work on the same object in the image.

The analysis object parameter sets belong to the analysis, and are stored together with other information about the analysis functions when "store_analysis" is selected. This is the case both for total storage and storage by function. They will thus be recreated, including their bindings, when recall_analysis is selected.

Please note that the OPSC is not stored by store_analysis.

The analysis object parameters sets remain in use as long as the analysis of an IR channel is active.

The object parameters are used also at Object signal presentation.

The only relevant object parameter for difference images is the object distance. The other parameters exist, but have no effect on the calculations.

The total number of analysis object parameter sets that can exist at the same time is limited to 9. The limit is set by an environment variable (NUM_ANA_OPS#). If you need to raise it, please consult the help text for usrdef-environ.

ECALC can compute the emissivity factor. If you place a spotmeter on a point on an object and the system shows a temperature that you know is incorrect, you can enter the correct temperature for the same point. The ECALC function will use these two values, the "shown" and the "known" temperature, to compute a new Emissivity factor.

The rules for the two temperatures are the following:

* The "shown" and the "known" temperatures must either both be higher than or both be lower than the Ambient Temperature.

* The absolute difference between the "known" and the Ambient temperature must be at least:

  10 units, if measured in object signal units, or

  3 degrees, if measured in degrees Kelvin or Celsius, or 5 degrees, if measured in Fahrenheit.

* The two temperatures must of course also be such that the new Emissivity factor is valid, i.e. falls between 0.01 and 1.00.

If a valid new value can be computed from the current Object Parameter Set and your values for "shown" and "known" temperature, you are presented with a confirmation panel in which the old and new emissivity values are shown, along with your "known" temperature and the result temperature. Ideally, those two temperatures should be identical. However, due to rounding effects, a small discrepancy is common. If the result seems logical, click the OK button to make the new emissivity value replace the old one in the object parameter set.

You should only try calculating the emissivity under stable conditions, such as when having a steady image from the scanner or a frozen replay of images from disk.

ECALC is NOT allowed for difference images.

In the spot, area and line menus there are two selections.

One is Use OPSC. Selecting this choice means that the measurement values for the spot, area or line will be calculated with OPSC.

The other choice is Use other. You can bind an analysis function to the object parameter set of an other analysis function or to OPSC (the set used for scaling). You can also create a new object parameter set for the analysis function.

Enter the name of the object parameter set, to which you want to bind the analysis function.

OPyyxx	- yy = SP, AR or LI xx = 01 .. 99
OPSC	- object parameter set for the scale
OWN	- create a new set (same as "keep current")

Click on OK to perform the binding.

The CANCEL button cancels the function. The dialog panel is removed from the screen.

OFFSET CORRECTION

MENU: Scale menu - Offset correction

OPTIONS:
Control
Set
Keep current
From source

DESCRIPTION

The offset correction is meant to compensate for a possible offset in the scanner. With this window it is possible to put in a positive or negative offset, i.e. add a certain value to or subtract it from the digital values for each pixel in the images.

Clicking on Control will display a control window.

There are 4 buttons after the text OFFSET. The ones with a + or a - in them will change the offset value one unit up or down. The buttons with ++ or — in them will change it with 10 units.

CLEAR	will reset the offset value to 0.
KEEP	will write the selected value into the image.
FROM SOURCE	means that the offset value will be fetched from the actual source, whether a stored image or the scanner.
QUIT	leaves the function without making any changes.

The actual Offset Correction value is displayed under the lower right corner of the IR image, for examples OC=7.

OPEN

MENU: Icon menu
System menu - Window handling

OPTIONS:

DESCRIPTION

Re-opens a window that has been reduced to an ICON. The icon is a representation of the window that has been closed.

When OPEN is selected from the WINDOW HANDLING menu the pointer changes to a black spot which must be placed within the boundary of the icon to be opened. The mouse button is then clicked and the window re-opens.

When OPEN is selected from the ICON menu the window re-opens immediately.

OS9

MENU: System menu - Create window

OPTIONS: There is a long list of OS9 options available in ERIKA. See in the Help texts Topic OS9-utilities.

DESCRIPTION

By clicking on OS9 in the Create window menu an OS9 window will open from which a number of OS9 utilities can be reached. Some of them have their own entries in this manual. See for example File transfer or Ethernet info.

There are quite a large number of other functions available also. They are quite extensive to their character. Therefore the best way to learn more about them is to use the Help text system, Topic OS9-utilities.

In OS9 there is among other things also a complete full-screen editor, OS9-umacs.

The bitmap editor is another example of an OS9 function.

PLOT

MENU: In the result window - The entries for the different functions

OPTIONS:

DESCRIPTION

The plot window only plots analysis results from images that are accepted by the acceptance function.

The plot window plots up to six different analysis results. The graph is scrollable and controlled by the scroll bar below the plot area. Scrolling is made by clicking on the scroll bar with the right or left mouse button. Clicking the left button scrolls the contents of the window to the left, which means you see more on the right side, and vice versa. The further to the right you click, the greater the scrolling. REMOVE the window by clicking on the window top line and then selecting the Remove menu item.

The most recent plot(s) are displayed in six plot labels below the scrollbar. The label frame has the same colour as the corresponding plot curve is drawn with. The colours are assigned in the same order as is used for the markers in the IR window when spotmeters, lines, etc. are defined. Thus, for example if you choose to plot spotmeters no. 1, 2 and 3 (in that order), their plot curves will be displayed in the same colours as their markers.

REMOVE a plot by clicking on the plot label and selecting the REMOVE option.

The status label in the lower right part of the plot window shows plot number (since start of plot) and plot time. It also shows whether plotting is active or not.

A popup menu is displayed if you click on the graph area with the right mouse button (or the left button, unless you have added a cursor; see below).

The menu has these options:

* Add cursor

* Remove cursor
* Store
* Recall
* Scaling
* Plot on/off
* Status
* Abs/rel time
* Clear all

ADD or REMOVE a plot cursor. The cursor will display plot data for any plot currently in memory. After you have selected the ADD CURSOR menu item, you can position the cursor by clicking in the plot graph with the left mouse button. It is also possible to press and drag the cursor with the left mouse button. If a cursor is defined, the status field in the lower right corner of the plot window will always show data for the image that the cursor indicates. Otherwise, the status window always shows data for the image last accepted. While the cursor is active, you must use the right mouse button to activate the popup menu again.

STORE and RECALL plot data from file. Recalling plot data from file will put the plot in inactive state. When a plot file is recalled, the x and y scaling is reset as closely as possible to what was used when the file was written.

SCALING will, if selected produce a dialog panel in which you can change the scaling along both the y (=temperature) axis and the x axis (image no. or time).

The temperature scale can be automatic which means that it follows the scale in the IR window. If you prefer another temperature scale, you choose the Fix scale and specify the maximum and minimum values. Obviously, the max value must be higher than the min value. Along the x axis, you can choose between Image scale and Time scale. Image scale simply means that one image corresponds to one pixel (can be expanded to two, three or four pixels). Time scale means that the distance between two images is proportional to the difference in image times. Please note that in this panel you only choose the TYPE of x scale. The SCALE of that scale type can then be adjusted using the TIME SCALE or IMAGE SCALE buttons in the window.

When you change between different time scales or image scales, the width of the part that you can see without scrolling will change. The center of the presented part will also change automatically. If the end (most recent) plots are visible, they will be kept in view. If the cursor (see below) is active and visible it will be kept in view. Otherwise, the center will stay where it is.

As the plotting proceeds, the chosen time scale may become impossible to use. The plot window will then automatically switch to a more appropriate x-scale.

The PLOT ON/OFF menu item toggles the plot window between active and inactive state. When inactive (off), new images are ignored except that their scale information is checked if the temperature scale is set to Auto.

Choosing the STATUS menu item displays some information about the current scaling, and if a plot file has just been read in, the plot file name is also shown.

The ABS/REL TIME menu item toggles time display in the status label between absolute and relative time (regardless of whether Time scale or Image scale is chosen for the x scale).

The CLEAR ALL menu item deletes all current plot values. Unlike the previous version of the plot window, Clear all no longer changes the active state, so if plotting is active and you select clear all, plotting will continue when new images are received.

Limitations for the plot handling:

Up to 1000 values for six result values are kept in a table in memory at a time. By scrolling the window, you can see all these values. When the table becomes full, a number of values (usually 200) in the beginning of the table are deleted, and the remaining values are shifted down. These values are then totally lost. After this, the table will keep containing between 800 and 1000 plot values.

When TIME SCALE is chosen, images MUST arrive in ascending time order, if they are to be plotted! If an image comes in that has an earlier time than the last one, it is quietly ignored. This is of course not a problem, if you are plotting images as they arrive from the scanner, but can occur when you recall stored image sequences and play them back in reverse order, or when stored images or sequences are recalled out of time order.

If you choose IMAGE SCALE, images are plotted even if not in chronological order, but if you switch to Time scale and the order is not correct, the plot will first be cleared.

The plot window can plot values at a rate of up to 4-5 images per second.

PRINT FILE

MENU: System menu

OPTIONS:

DESCRIPTION

Some text windows are equipped with a Print button or a Print menu. They can be printed on a text printer or to a text file.

The easiest way to print text files is to select "print file" in the File handling menu in the System menu.

Fill in the name (with extension) and location in the dialog panel and click on OK. This will print the textfile on your printer as a background task (i.e. without locking the system controller) if you have connected the printer correctly and set the printer port parameters properly.

The printer port parameters are set by the Set printer port function of the Equipment menu in the System menu. The same function can also be used to direct the printing to a file instead of to the printer.

Several windows are equipped with a print button or a print menu. Press it, and the contents of the window will be printed as text on the device determined by the set printer port function just mentioned.

RECALL

MENU:

Scale menu - Obj par scaling
Plot menu
IR menu - Image comment
IR menu - Analyse image
Spot menu - Object parameter set
Line menu - Object parameter set
Area menu - Object parameter set
Histogram menu
Profile menu

OPTIONS:

DESCRIPTION

ANALYSIS STATE DATA stored on disk files may be recalled to an IR channel. Enter the location and name of the analysis state file into the input fields LOCATION and NAME. The current location is indicated by a full stop. Leave as it is or write a new location name into that field. Enter the name of the desired file into the NAME field.

Please note that any analysis already running may be redefined depending on the contents of the analysis state file.

Image comments and object parameters used for scaling the image can also be recalled from disk in the same way as just mentioned.

PLOT DATA stored on disc files may be recalled to a plot window. Enter the location and name of the plot file into the input fields LOCATION and NAME. The current location is indicated by a full stop. Leave as it is or write a new location name into that.

The LIST button shows all files containing executable commands, which also means files containing commands with no relation to the analysis functions.

Click the OK button in the dialog panel to recall an analysis state to an IR channel.

The CANCEL button cancels the function and removes the dialog panel from the screen.

RECALL IMAGE(S)

MENU: IR menu - Select Source

OPTIONS:

DESCRIPTION

Enables the user to recall stored images for presentation in the IR window.

On selecting RECALL IMAGE(S) from the SELECT SOURCE menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be recalled.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The LOCATION can be left as it appears with just a full stop indicating the current directory or a new directory can be typed. The file name is then typed into the NAME field and can contain wildcards (*?). When the field contains wildcards all the matching files will be recalled as if they were a sequence. The matching files will be displayed if the LIST button is clicked. If all the files are required the CANCEL button must be selected to exit from the LIST window. The .IMG file extension is already displayed.

If the file name is not known clicking on the LIST button brings up a window listing the directories and files available. The .IMG file extension (with an asterisk * meaning all files) is already loaded into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields of the dialog panel.

Clicking on the OK button starts the recall action. The image recalled replaces the previous image in the IR window. Any changes made to that image's comments or parameters are lost. ENSURE that all necessary changes have been saved prior to using RECALL IMAGE(S).

The CANCEL button cancels the recall function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the Recall Image function.

RECALL SEQUENCE

MENU: IR menu - Select Source

OPTIONS:

DESCRIPTION

Enables the user to recall stored image sequences for presentation in the IR window.

On selecting RECALL SEQUENCE from the SELECT SOURCE menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be recalled.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The LOCATION can be left as it appears with just a full stop indicating the current directory or a new directory can be typed. The file name is then typed into the NAME field. The .IMG file extension is already displayed.

Clicking on the LIST button brings up a window listing the directories and files available. The .IMG file extension (with an asterisk * meaning all files) is already loaded into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields of the dialog panel. Sequence files are distinguished from other image files by the number inserted between the file name and the .IMG extension (e.g. NAME_0001.IMG). If a file other than 0001 in a sequence is selected then the image contained in that file will be the first to be displayed in the IR window. The sequence can then be stepped forward or backward from this image.

This function can also handle files with the extension .SEQ.

Clicking on the OK button in the dialog panel starts the recall action.

The CANCEL button cancels the recall function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the Recall Sequence function.

The sequence recalled replaces the previous image in the IR window. Any changes made to that image's comments or parameters are lost. ENSURE that all necessary changes have been saved prior to using RECALL SEQUENCE.

When the sequence has been loaded a further dialog panel appears with buttons resembling the keys of a video cassette recorder. Clicking on the required button (pressing) selects the function. The keys have the following functions:

- ■ STOP key - Stops the replay of the sequence when "pressed".
- ▶ PLAY FORWARD - replays all images from the present image to the final image of the sequence. Replay is at approximately one image per second.
- ◀ PLAY BACKWARD - replays all images from the present image to the first image of the sequence. Replay is at approximately one image per second.
- ▶▶ FAST FORWARD - replays from the present image to the last image of the sequence at high speed.
- ◀◀ FAST BACKWARD - replays from the present image to the first image of the sequence at high speed.
- >> TO END - Displays the last image of the sequence.

<< TO BEGINNING - Displays the first image of the sequence.

\+ STEP FORWARD - Steps forward one image at a time.

\+ ▶ STEP TO END - Replays from the present image to the last image of the sequence calculating the results of any analysis functions within the images.

\- STEP BACKWARD - Steps backward one image at a time.

◀ - STEP TO BEGINNING - Replays from the present image to the first image of the sequence calculating the results of any analysis functions within the images.

REDUCE SEQUENCE

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION:

This function can remove a few or many images from a .SEQ sequence file. Start by filling out the LOCATION and NAME fields, remembering that the wanted sequence file must have the extension .SEQ.

The FIRST and LAST fields are both empty. Type the numbers of images to be removed. If you wish to remove more than one part of the .SEQ file, YOU SHOULD START WITH THE LAST PART and proceed towards the beginning of the file. The reason for this is that the images will be renumbered, and the images after the deleted slot will get the numbers of the just deleted ones.

REFRESH SCREEN

MENU: System menu - Window handling

OPTIONS:

DESCRIPTION

Clears and reactivates the complete screen.

On selecting REFRESH SCREEN from the WINDOW HANDLING menu the screen is blanked completely (display adaptor memory cleared). The display is then recreated eliminating any errors that may have occurred.

RELATIVE TO BASE

MENU: Time presentation menu

OPTIONS:

DESCRIPTION:

The IR window presents the image capture time in a line below the image. The information can also be shown in the result window. In this case it shows the relative time. This means that it shows the time that has elapsed since the base time was set + the base time.

Example: If the base time has been set to 0:0:0 the relative time means the time which has elapsed since that base time was set.

If the base time has been set to 10:20:30 the relative time means the time which has elapsed since that base time was set. An image which is captured 10 seconds after the base time was set will get the time 10:20:40.

REMOVE

MENU:

Area menu
Clock menu
Histogram window
Icon menu
IR menu
Isotherm line
Line menu
Company label window
Result window
Spot menu
System menu - Window handling
Window menu

OPTIONS:

DESCRIPTION

Removes a window or analysis function from the screen.

When REMOVE is selected from the WINDOW HANDLING menu the pointer changes to a skull symbol which must be placed within the boundary of the window or icon to be removed. The mouse button is then clicked and the window is cleared completely from the screen.

When REMOVE is selected from the IR menu, a WINDOW menu, an ICON menu or the CLOCK menu then the window is removed immediately.

REMOVE can also be selected from the AREA, LINE or SPOT menus. The window pointer is positioned on the analysis function flag, e.g. ARO1, ARO2, LI01 etc., and the mouse button clicked. The menu opens and REMOVE can be selected. The selected analysis function and the corresponding results are then removed.

Removing the IR window implies that all windows associated with it also will be removed. Beware!

REMOVE ANALYSIS

MENU: IR menu - Analyse image

OPTIONS:

DESCRIPTION

Selecting REMOVE ANALYSIS from the ANALYSE IMAGE menu removes all analysis functions from the IR window.

All areas, lines and spots are removed from the window and the results window is removed. Windows having been opened secondarily to the result window, like the histogram window or the profile window will be erased as well. This also refers to a plot window being attached to area, line or spot functions. The Remove Analysis function will also remove the isotherms.

RENAME FILE

MENU: System menu - File handling

OPTIONS:

DESCRIPTION

Renames a selected file.

On selecting RENAME FILE from the FILE HANDLING menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and OLD NAME of the file to be renamed and the NEW NAME for the file.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The FROM location can be left as it appears with just a full stop indicating the current location or a new location can be typed. The old file name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the directories and files available. In order to list the available files the required file extension (or an asterisk * meaning all files) must be typed into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the FROM location and name fields.

The NEW NAME field is completed by typing in the new file name.

Clicking on the OK button starts the rename action.

The CANCEL button cancels the copy function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the rename file function.

RESHAPE

MENU:

Area menu
Circle menu
Ellipse menu
Line menu

OPTIONS:

DESCRIPTION

Enables an AREA or LINE analysis function size and/or shape to be modified.

Selecting RESHAPE from the AREA or LINE menus (by clicking on the identification flag) brings up a dialog panel with the instruction "Catch edge/corner" in a text field. The selected analysis function changes colour to differentiate it from any others in the image.

The pointer is positioned on the line or area border and the mouse button clicked. If a corner has been selected a small box highlights this point. The instruction to "Press and drag" then appears in the text field. The point selected is then dragged to its new position. The new shape is displayed in a different colour on the image.

Corners can be added to a line by clicking at the desired point on the line. The corner can then be moved as described above. Corners are automatically removed if they become part of a straight line between their adjacent corners.

If the area selected was placed using the BOX option then it will remain rectangular when reshaped.

If the area selected was place using the CIRCLE or ELLIPSE options they should be handled in the same way as the AREA option

Clicking on OK in the dialog panel completes the Reshape action.

RESIZE

MENU:

System menu - Window handling
Clock menu
Window title bar - Resize symbol

OPTIONS:

DESCRIPTION

Enables the selected window to be enlarged or reduced. Enlarging or reducing the window only effects the amount of information displayed. Enlarging a window in which all the information is already visible only increases the boundary size.

When RESIZE is selected from the WINDOW HANDLING menu or the CLOCK menu the pointer changes to the MOVE symbol which is then placed either on the boundary or a corner of the window to be enlarged or reduced. The mouse button is then clicked and the window outline can be dragged to enlarge or reduce the window.

The window can also be resized by positioning the pointer in the extreme right hand box of the title bar and pressing and holding the mouse button down. The pointer changes to the move symbol and the window can then be resized by dragging the pointer with the mouse. The new window size is outlined on the screen. Releasing the mouse button completes the resizing action.

The window will be moved to the front by this operation.

During the operation the size (in picture elements or characters) is shown in the top left corner of the screen.

RESULTS

MENU:

Area menu - Results
Line menu - Results

OPTIONS:

Area menu - Results - Extremes, Statistics, Histogram, Size of area
Line menu - Results - Extremes, Statistics, Histogram, Profile, Length

DESCRIPTION

Enables the user to display the results of area and line analyses in various formats.

Selecting RESULTS from either the AREA or LINE menus (by clicking on the identification flag) brings up a dialog panel showing the options available.

For area and line analyses the user is given the following options:

Extreme values provides the minimum , the maximum and the difference for the measurement points in the area or on the line.

Statistics provides the average, the median and the standard deviation for the measurement points in the area or on the line. The average value is the arithmetical temperature average in the area or along the line. If presentation unit is object signal, then it is the average of the signal values.

Histogram provides a histogram of all the measured points in the area or on the line.

Size of area provides the size of the area in mm^2 or m^2 in the result table.

For line analyses the user is also given the following option:

Profile provides a profile of the measurements along the line. A cursor can then be placed on the profile and the measurement at that point is displayed. The cursor position is reflected in the image as a cross intersecting the line.

Length provides the length of the line in mm or m.

The above options are selected by clicking on the button next to the option required. The button is then "latched" in the down position.

Clicking on OK completes the selection and the required results are displayed in the result window. In the case of the PROFILE and HISTOGRAM options a separate window opens showing the profile or histogram. The measurement span is given to the left of the window.

A Scroll bar appears below the profile if the profile is too long for the window. The left and right mouse buttons are then used to shift the profile within the window.

Clicking on the CURSOR button brings up a short menu allowing the user to ADD/MOVE or REMOVE the cursor.

Selecting ADD or MOVE makes it possible to position the cursor on the profile. Clicking at a point on the profile positions the cursor line at that point. The cursor can be repositioned by clicking at another point on the profile or by dragging the cursor to the new position. When the required position of the cursor is obtained, clicking on OK changes the cursor line to a cross. The measurement value and the image coordinates at the cursor position are displayed in a text field below the profile. An X marker is also displayed at the corresponding point on the line in the image.

Selecting REMOVE removes the cursor.

Clicking on the EXPAND button brings up a short menu of expansion options. The expansion value is displayed in a text field next to the EXPAND button.

The presentation of temperatures or object signal is sometimes accompanied by warnings of different kinds:

---- means "No value exists". This happens for instance when the scanner is disconnected or a value far outside the current calibration is found.

*1234 means "Uncalibrated". The value is just outside the current calibration and may still be usable.

?1234 means "Unreliable". The value is not OK at the moment. The reason may be that the scanner is stabilizing after a change of aperture.

For areas and lines there will be an * in front of the result if more than 10% of the individual points are marked with *.

The extremes and the statistics can, along with the temperatures from spotmeters, be plotted in a separate PLOT window. For more information about this, see PLOT.

In the HISTOGRAM and PROFILE menus there is a possibility to STORE and RECALL to/from an ASCII file with the histogram and/or profile information in it.

These files are stored and recalled like any image file. See e.g. RECALL or STORE.

ROTATE IMAGE

MENU: Scanner menu

OPTIONS:

DESCRIPTION: In some cases the image 'seen' by the scanner is not what the operator wants to see. This function remedies the case when mirrors or microscopes are involved, turning the image upside down.

The function will, when activated, turn the image upside down again, thereby giving out a correct image as the operator wants it.

Calling the function twice will reset the function.

RUN MACRO

MENU: Top line menu

OPTIONS:

DESCRIPTION:

This function makes it possible to run a macro which has been written before. The function handles one command after the other. Should there be anything wrong with a command the execution of the macro will be aborted, unless the button IGNORE ERRORS has been clicked on.

For writing a macro see Appendix, Command list.

To edit the macro question panel use the arrow keys to move the cursor within the field. Use the Delete or Backspace keys to delete the letters to change.

The LOCATION appears with just a full stop indicating the current directory. Type if necessary the new directory into the field.

The macro name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the macros available. Select a macro from the list and click the OK button to load this information into the location field of the dialog panel.

Click the OK button in the dialog panel to start the macro.

If you click on the IGNORE ERRORS button, the running of the macro will continue even if some part of it went wrong.

The CANCEL button cancels the function and removes the dialog panel from the screen.

RUN OS9 COMMANDS

MENU: Exists as help text macro_commands

OPTIONS:

DESCRIPTION: Macro commands are commands derived under OS9, which have been adapted for use in macros. Macros are normally built up by the usual ERIKA commands but these commands extend the usability of macros.

This is a brief description of all macro commands which are accepted by the ERIKA macro reader. These macro commands are prefixed with the character '$'.

The recognized macro control commands are:

$LOOP - begins a loop

$ENDLOOP - ends a loop

$IF_OK - Do following commands if last command executed OK

$IF_NOK - Do following commands if last command returned error

$ELSE - Do else

$ENDIF - Ends conditional execution

$WAIT - macro wait

The following macro commands also exist, but are only synonyms to some of the ones above for compatibility reasons. Do not use them in new macros:

$OK - Same as $IF_OK

$NOK - Same as $IF_NOK

$< - Same as $<

Here follows an example of how to use a macro command.

Loop execution:

A loop begins with: $LOOP [<times>] <times> should be a positive integer number. <times> may be omitted, in this case the loop will continue forever or until an error is found (if ignore errors or error handling defined it will continue anyway). "Break macro" from the top line menu may be used to break an "eternal" macro loop.

A loop is ended with $ENDLOOP.

Commands between $LOOP and $ENDLOOP are executed in a loop the given number of times. Loops may be nested (max 10 levels).

Loop example:

```
CREATE_IRWINDOW IRCHAN=1

START_SCANNER IRCHAN=1

# Store 3 images

$LOOP 3

# Store image on name TESTYYMMDD_XX.IMG

STORE_IMAGE IRCHAN=1,NAME=AUTO_TEST

$ENDLOOP
```

SCANNER CONTENT

MENU: System menu

OPTIONS:

DESCRIPTION

Provides the user with information on scanner status

Selecting SCANNER 1/2 CONTENT from the EQUIPMENT menu opens a window containing all the information held in the scanner. The scanner identification data, the number of filter cassettes and types of filters, and the list of lenses is displayed followed by the calibration data for the scanner, filters and lenses.

SCANNER CONTROL

MENU: Scanner control panel

OPTIONS:

DESCRIPTION

Enables the user to control the scanner motors and select filters and temperature ranges.

At start-up or when SHOW SCANNER is selected from the SELECT SOURCE menu the SCANNER CONTROL panel is opened. The following controls are available on the panel:

Motor Power ON/OFF - The scanner motors can be switched ON or OFF by clicking on these buttons.

Frame rate NORMAL/HIGH - Selects the scanning rate required for full frame or reduced frame image display.

Filter cassette selection - Clicking repeatedly on the ▼ button cycles through the filter cassettes available with the selected scanner. If a filter cassette other than that fitted to the scanner is selected the new cassette must be fitted and the required filter **must** then be selected in order for the cassette to align itself.

Filters - The panel gives the user a choice of a maximum of five filters per cassette. Filters are selected by clicking on the relevant button. The temperature ranges displayed in the range selection buttons change as the filter selection is made.

Temperature Range selection - The four different temperature ranges can be selected by clicking on the relevant buttons. The applicable temperature range is displayed on the button.

The SCANNER CONTROL panel is a window with all the relevant functions. When not required the panel can be reduced to an icon. The scanner control panel can be removed but it will then come back automatically if the scanner is still the source.

If You have a Stirling scanner, a button for stand by is added.

Stand by is: mirror motor off and stirling cooler in low power mode.

SCANNER LOADING

MENU: System menu

OPTIONS:

DESCRIPTION

The actual scanner type and serial number is shown. Use the V-shaped buttons to select files to be loaded into the scanner PROM. A program and/or a calibration file can be selected. A push on OK, after file(s) selection, will display "Scanner loading control panel" with more information about selected files, before actual loading takes place.

The CANCEL button cancels the loading function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the Scanner loading function.

The loading of a new scanner program starts by erasing the old program after which the new program is loaded. The whole process takes around 40 minutes. It is extremely important that the loading process not be interrupted, as this will leave the scanner without any program in it. Hence, the scanner is dead.

Therefore it is vital that this function be handled with great care. In order to carry out the function the loading file must be copied from the diskett to the hard disk. It is recommended to erase this loading file from the hard disk after it has been loaded. Thereby it is impossible to activate the loading function and the scanner runs no risk of getting its programs erased.

SCREEN SAVER ON/OFF

MENU: System menu - Equipment

OPTIONS: On
Off

DESCRIPTION

Enables the user to select the screen saver.

The screen saver will blank the screen after ten minutes to prevent damage to screen phosphors caused by the burn-in of images.

SELECT SOURCE

MENU: IR menu - Select source

OPTIONS:

Show scanner
Align scanner
Recall image(s)
Recall sequence
Show other IR window
Show other manipulated
Time process control
Display process control
Align & Subtraction control

DESCRIPTION

Enables the user to select the source of the image to be presented in the IR window

For an explanation of the various options available from this menu refer to the individual function descriptions.

SET BACKGROUND

MENU: System menu - Equipment

OPTIONS:
Standard
White
Grey
Black
Colour 1-9
Phase of moon

DESCRIPTION

Enables the user to choose the background colour.

The STANDARD background is the default.

PHASE OF MOON presents an image of the moon in its particular phase at the time of selection. Reselecting this option updates the image.

The colours represented by Colour 1-9 are the following:

1 Light blue
2 Violet
3 Yellow
4 Light blue
5 Red
6 Dark blue
7 Dark red
8 Green
9 Grayish blue

SET BASE TIME

MENU: IR menu - Image base time menu

OPTIONS:

DESCRIPTION:

Use the arrow keys to move the cursor within the field. Use the Delete or Backspace keys to delete the letters to change.

The first roll choice determines which time source to use. Choose between user defined time, current time or image time. User defined time uses the input field below.

The second roll choice will update the current image source to use a new image base time. If the update event is NOW the new reference time is effective immediately otherwise a control panel is started showing the image base time status.

Click the OK button in the dialog panel to start the timer.

The CANCEL button cancels the function and removes the dialog panel from the screen.

SET DATE AND TIME

MENU: Clock menu
System menu - Equipment

OPTIONS:

DESCRIPTION

Enables the user to change the system date and time.

When SET DATE AND TIME is selected from either the EQUIPMENT or the CLOCK menus a dialog panel appears giving the system date and time settings. These settings can be edited to give the correct date and time and are entered into the system when the OK button is selected.

SET LOCATION

MENU: System menu - File handling
Top line menu

OPTIONS:

DESCRIPTION

Sets the current location from which all directories and files are taken (the initial path).

Selecting SET LOCATION from the FILE HANDLING menu brings up a dialog panel requesting the new LOCATION.

The arrow keys are used to move the cursor within the field. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The LOCATION appears with just a full stop indicating the current directory. A new directory is then typed in.

Clicking on the LIST button brings up a window listing the directories available. Selecting a directory from the list and clicking the OK button loads this information into the location field of the dialog panel. A single full stop(.) indicates the current location. Two full stops (..) indicates the directory above. Three full stops (...) indicates a level further up. It is not possible to select a location higher than the device name, e.g. /h0.

Clicking on the OK button in the dialog panel changes the current location to that selected.

The CANCEL button cancels the recall function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the Recall location function.

It is recommended always to store images under location

/H0/USR/subdirectory

where 'subdirectory' means e.g. ERIKA or COMPANY1 etc.

At a possible software update all files under /H0/USR/etc will be saved over to the updated version. Files under other locations will be deleted or changed.

SET PALETTE

MENU: Scale menu

OPTIONS:

DESCRIPTION

Enables the user to recall a stored palette to be used as a temporary default.

A number of default palettes that are not shown in the select palette menus are stored in the /H0/ASYS/LIB directory. These can be recalled in the same way as other palettes. The user is also able to recall palettes that have been edited with the text edit function and stored under different names.

Selecting SET PALETTE from the SCALE menu brings up a dialog panel requesting the LOCATION and NAME of the palette file to be recalled.

The arrow keys are used to move the cursor within the fields and between fields. The Delete key on the keyboard erases the character under the cursor and the Backspace key erases the character to the left of the cursor.

The LOCATION can be left as it appears with just a full stop indicating the current directory or a new directory can be typed. The file name is then typed into the NAME field. The .PAL file extension is already displayed.

Clicking on the LIST button brings up a window listing the directories and files available. The .PAL file extension (with an asterisk * meaning all files) is already loaded into the SELECT field in the LIST dialog panel. Selecting a directory and file from the list and clicking the OK button loads this information into the location and name fields of the dialog panel.

Clicking on the OK button in the dialog panel starts the recall action.

The CANCEL button cancels the recall function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the Set Palette function.

SHOW ERIKA VERSION

MENU: System menu - Equipment

OPTIONS:

DESCRIPTION

Displays the version of the ERIKA software in use.

SHOW OTHER IR WINDOW

MENU: IR menu - Select Source

OPTIONS:

DESCRIPTION

Enables the user to view the same image in both IR windows but possibly with different parameters applied to each image.

Both IR windows must be open before selecting this option.

This option is selected in the IR window that is to receive the image from the other. Select SHOW OTHER IR WINDOW from the SELECT SOURCE menu and the image that is shown in the other window is displayed in the selected window as well.

Different settings and parameters can then be applied to the images and separate analyses can be performed on each. The system sees the two images as separate entities.

SHOW OTHER MANIPULATED

MENU: IR menu - Select source

OPTIONS:
Time processing control
Display processing control
Align & Subtraction control

DESCRIPTION:

This function takes the images from one channel, processes it in a filter and shows the result in the other window.

As there are a substantial number of filters implemented, they have been parted into three groups according to the options above. See them for further information.

SHOW SCANNER

MENU: IR menu - Select Source

OPTIONS:

DESCRIPTION

Presents the real-time scanner image in the IR window.

Selecting SHOW SCANNER from the SELECT SOURCE menu starts up the scanner, presents the image from the scanner in the IR window and brings up the Scanner Control Panel. Refer to SCANNER CONTROL for further information.

The previous image is replaced with that from the scanner. It is recommended that this image be stored prior to selecting SHOW SCANNER as all previous information will be lost when the scanner image is loaded.

SOUND ON/OFF

MENU: System menu - Equipment

OPTIONS: Sound on

Sound off

DESCRIPTION:

There are a number of situations, when a beep is heard. This is usually because of an operator error e.g. you have tried to call up a function which operates in IR window 2 although this window is not yet opened.

However, there exists a possibility to control whether this beep sound shall be heard or not.

The length and tone pitch are controllable by commands, see MAKE_SOUND and CONTROL_SOUND in the Command list.

By default the sound is set to frequency = 440 Hz, which is the so-called 'Normal A'. The default duration of the beep is 1/2 second.

MENU:

Scale menu - Obj par scaling
IR menu - Analyse image - Area menu
IR menu - Analyse image - Line menu
IR menu - Analyse image - Spot menu
IR menu - Analyse image - Area menu - Histogram menu
IR menu - Analyse image
Plot menu

OPTIONS:

DESCRIPTION

Individual analysis functions as well as the whole current set of functions can be stored on disk.

The numbers, positions, shapes and active measurements are stored as macros in disk files. The isotherms are included.

Select Store from the Analysis menu of the IR window in question if all functions are to be stored. Select Store from the Symbol menu of a specific Spot/Area/Line if just one is to be stored. Fill in the dialog panel coming up.

Select Recall from the Analysis menu of an IR window if you want to recall a stored state.

It is possible to store the analysis state of one IR channel and recall it to the other IR channel.

Enter the location and name of the analysis state file into the input fields LOCATION and NAME. The current location is indicated by a full stop. Leave as it is or write a new location name into that field. Enter the name of the analysis state file into the NAME field. Optionally, enter file title of your own choice into the TITLE field.

Select "Overwrite existing file" if you want to replace an already existing file. Select "Append to existing file" if you want to append the analysis state information to an already existing file. Append has higher priority than overwrite.

Click the OK button in the dialog panel to store the analysis.

The CANCEL button cancels the function and removes the dialog panel from the screen.

The HISTOGRAM classes of an area or a line can be stored on files in ASCII text format. The file will contain the temperature classes of the histogram along with corresponding percentage.

PLOT DATA is stored on disk files. Enter the location and name of the plot file into the input fields LOCATION and NAME. The current location is indicated by a full stop. Leave as it is or write a new location name into that field. Enter the name of the plot file into the NAME field.

STORE IMAGE

MENU: IR menu

OPTIONS:

DESCRIPTION

Enables the user to store selected images for analysis at a later date.

On selecting STORE IMAGE from the IR menu a dialog panel appears on the screen.

The dialog panel asks for the LOCATION and NAME of the file to be stored

The LOCATION can be left as it appears with just a full stop indicating the current location or a new location can be typed. The file name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the locations and files available. Selecting a location and file from the list and clicking the OK button loads this information into the FROM location and name fields. The name field automatically contains the .IMG file extension.

The arrow keys are used to move between fields.

Clicking on the OK button starts the store image action.

If the OVERWRITE button is in the "down" position an existing file will be overwritten. If the button is in the "up" position then the write action will be aborted.

The CANCEL button cancels the copy function and removes the dialog panel from the screen.

The HELP button brings up a help text window with information on the store image function.

It is recommended always to store images under location

/H0/USR/subdirectory

where 'subdirectory' means e.g. ERIKA or COMPANY1 etc.

At a possible software update all files under /H0/USR/etc will be saved over to the updated version. Files under other locations will be deleted or changed.

STORE SEQUENCE

MENU: IR menu

OPTIONS: Start

Store

Until

DESCRIPTION:

The user can store selected image sequences to any storage medium for later analysis.

It will bring up a dialog panel which starts with LOCATION and NAME of the sequence to be stored. Names which start with AUTO_ will be generated automatically to unique names. AUTO_NAME will generate names like NAME931224_00_0001.IMG etc. At the next occasion it is not necessary to change anything in the dialog panel. If OK:d without further changes the next sequence will generate names like NAME931224_01_0001.IMG etc.

There is a number of START recording options.

Click on the arrow down button in the dialog panel to step through the different options. They are the following:

Now: Starts the sequence recording as soon as the OK button is clicked.

At HH:MM:SS:

Starts the sequence recording at the time specified. The time is entered in the text field under the option field. If the complete time is not entered the system assumes the first pair of numbers to be the hours.

At trig A/B:

Starts the sequence recording when the TRIG A (or B) button is pressed (see below).

It is possible to give a delay time in the text field under the option field. As default there is no delay.

If delay is given it starts counting when the start condition becomes true. When delay count is ready,the actual recording starts.

Delay time should be given as (HH:MM:)SS.

At External Trig:

Starts the sequence recording when an external trig (A/B/C or D) is received (see below). It is possible to give a delay time in the text field under the option field (see "At trig A/B" above).

At Alarm Trig:

Starts the sequence recording when an alarm trig (A/B/C or D) is received (see below). It is possible to give a delay time in the text field under the option field (see "At trig A/B" above).

Next option to be set is the STORE option. Go through the various options like for the START option.

Highest speed:

Records the images at the highest speed possible.

Accepted images:

Only images with acceptance status set will be stored.

At HH:MM:SS:interval

Records an image at the time interval set. The time is entered in the text field under the option field. If the complete interval time is not entered the system assumes the last pair of numbers to be the seconds.

Every #### image

Records an image at the image interval set. The number is entered in the text field under the option field. This option is only valid for burst devices.

At trig A/B:

Records an image when the TRIG A (or B) button is pressed (see below).

At External Trig:

Records an image when an external trig (A/B/C or D) is received (see below).

At Alarm Trig:

Records an image when an alarm trig (A/B/C or D) is received (see below).

The final option to be set is the UNTIL option. Select as for the other options.

Forever:

Records images until the limit of the used storage medium is reached.

End of images:Recording is stopped by an end of images signal from the source.

HH:MM:SS duration:

Recording is stopped after the wanted duration.

The time is entered in the text field under the option field. If the complete duration time is not entered the system assumes the last pair of numbers to be the seconds.

§#### storages:

Recording is stopped after the number of stored images set is reached. The number is entered in the text field under the option field.

At trig A/B:

Stops the sequence recording when the TRIG A (or B) button is pressed (see below).

It is possible to give a delay time in the text field under the option field. As default there is no delay.

If delay is given it starts counting when the stop condition becomes true. When delay count is finished, the sequence recording stops.

Delay time should be given as (HH:MM:)SS.

At External Trig:

Stops the sequence recording on external trig (A/B/C or D) (see below). It is possible to give a delay time in the text field under the option field.

At Alarm Trig:

Stops the sequence recording on alarm trig (A/B/C or D) (see below). It is possible to give a delay time in the text field under the option field.

The KEEP text field contains the number of stored images to be retained. The default is ALL. If a number is entered in this field the system will retain that number of images only. Hence, if further images are recorded they will overwrite images previously stored. The maximum number that can be entered is 9999 images.

If the file location and name are already in use the user will be informed about this. Click on the OVERWRITE EXISTING FILE button if this is to be done. Be careful!

The sequence that is to be recorded can be appended to an already existing sequence. The file LOCATION and NAME must be those of the existing sequence. The Append to existing sequence button (+) should be clicked on (pressed).

Clicking the OK button brings up a window displaying the file name and options selected. The numbers of images stored, lost and kept are displayed under the list of selections and are incremented as the sequence progresses.

The number of STORED images is the total number stored. The number of LOST images is the total number of images missed or lost.

The number of KEPT images is the total number of images retained. This will eventually reach the number set and will not increase. This means that previously stored images are being overwritten.

If the "images in one file" button is pressed all images will be stored in one file only (type .SEQ file). If LOCATION is a burst device, e.g. /BRAM, /B0 or /B1 image sequences will always be stored in one file (type .SEQ file).

When the criteria set in the dialog box have been met the store sequence function is complete and the images are stored either in separate files with the format:

NAME_0001.IMG .. NAME_9999.IMG

or in one file with the format:

NAME.SEQ

About trigs:

When using trigs to control the storage of images, and the used medium is not a burst medium, there may be a time gap between trig time and the actual image taken. The image may be taken either earlier or later than the trig event up to 3 images away in time.

To guarantee "correct" image taken, use a burst device.

SYSTEM FITNESS

MENU: System menu - Equipment

OPTIONS:

DESCRIPTION

In the system fitness window you can recall some system messages which have been recorded since the system was switched on. When the function is called up the most recent system message comes up.

Positive messages will cancel out previous error messages of the same kind instead. Thus, System fitness will say 'No errors reported' when all is well.

Click on PREVIOUS or NEXT to look at the recorded system messages.

Click on the CONFIRM button to remove the window.

TEMPERATURE COMPENSATIONS

MENU: IR menu - Select source

OPTIONS:

Emissivity equalization Control

Reflected ambient Control

Emissivity and reflected ambient equalization Control

Uniform control

DESCRIPTION:

About equalization of images

The images created by the ERIKA system controller are presented with a colour scale which is linear in temperature (or in object signal). The colours are determined in the same manner for the whole image, using the Object Parameter set for Scaling, OPSC.

This is correct if the object parameters are the same all over the image. Sometimes, this is not the case.

By the use of equalization which is a function, which from an object with greatly varying emissivities creates an image, which shows true temperatures and colours.

Two types of equalization are provided for ordinary images:

Emissivity equalization and Reflected Ambient equalization.

Use Emissivity equalization when the emissivity of your object varies a lot and Reflected ambient equalization if you have a mirror-like object with non-uniform ambient radiation which cannot be shielded off.

Subtracted images in temperature or object signal cannot be equalized.

The emissivity equalization uses a reference image taken when the object in all its points has a known temperature, well above or below the ambient temperature. It establishes the actual emissivity at each point of the reference image and uses this information to change the pixel values of the current image. The change compensates for the fact that OPSC just contains one emissivity factor.

The reflected ambient equalization uses a reference image taken when the object has a known temperature. That temperature is supposed not to be affected by the ambient radiation in any way yet. The equalization establishes the actual amount of ambient radiation at each point of the reference image and uses that piece of information to change the pixel values of the current image. The change compensates for the fact that OPSC uses only one ambient temperature value.

Emissivity equalization requires that the reflected ambient radiation be the same all over the image, and the reflected ambient equalization demands that the emissivity be the same.

Thus a special type of equalization is used when both of them vary at the same time. This "special" equalization needs two reference images taken at different object temperatures, well apart. It calculates the emissivity and the reflected ambient radiation of each point and compensates the current image.

The calculations of the system relies, as always, on proper values in the object parameter sets. This is especially important to remember for equalized images. If some parameter of the reference or current images was wrong, then the result image has to be discarded and the equalization calculations have to be repeated. Do not try to change the object parameters of an equalized image, not even the object distance.

Already equalized images cannot be equalized again.

Once an image has been equalized, most values of the object parameter set for scaling, OPSC, lose their significance. Do not change them, since the validity of the image temperatures depend on them. It makes no sense to use the emissivity calculation function for such images and it will only produce confusing results.

The same thing goes for the local object parameter sets of the analysis, OPAR07 etc. Don't use them with equalized images.

EMISSIVITY EQUALIZATION CONTROL
controls the parameters and reference image used for emissivity equalization, which is a function which takes images from "the other" IR channel, processes them and delivers them to "this" one.

Start by capturing (or retrieving) the reference image. The easiest way is to use the appropriate button on the control panel. Press [SET] at the bottom of the panel to activate your choice.

Then fill out the temperature of the object in the reference image to the right of the IR-1 IR-2 buttons.

This can be omitted if the temperature is written on the first line of the comment of the reference image. The syntax should be <TEMP ###.# X> or <OS ####>. X symbolizes C, F or K, for example <temp 28.6 C>.

Store the current image of IR-1/IR-2 as the future reference image.

Press the proper "Keep IR-X as reference" push button on the panel.

If the image comment contained a <TEMP> tag, that temperature will now show up in the input field.

Select "Equalize IR-1/IR-2" to start the processing. Press [SET] to activate your choice. If another reference image is wanted, fetch it, press "Keep", reselect "Equalize IR-1/ IR-2" and press [SET] again.

"Show reference image" brings up the most recently kept reference image upon pressing [SET].

The "Emissivity chart" creates an emissivity chart from the reference image. The chart shows emissivities * 100, but only if the presentation unit is Kelvin or Celsius.

The [QUIT] button removes the panel. The processing of images goes on, however, until another function is selected.

REFLECTED AMBIENT CONTROL
works like emissivity equalization control with the only difference that it compensates for a varying background temperature. Follow the instructions above.

The "Ambient chart" of the arrow button creates a chart of the ambient temperatures from the reference image. The accuracy of the emissivity factor of the object parameter set for scaling (OPSC) is of great importance to the validity of the result. The reason is that the reflectance factor used for the conversion of the reflected radiation into incident ambient radiation is equal to 1.0 minus the emissivity of the surface. The emissivity and transmission of the OPSC of this chart are both set to 1.0 for mathematical reasons. Do not change them.

EMISSIVITY AND REFLECTED AMBIENT EQUALIZATION CONTROL
works like emissivity equalization control with the difference that it compensates both for varying emissivities and varying background temperature. Follow the instructions above. Note that this functions needs two reference images taken at different object temperatures.

UNIFORM CONTROL
is meant for use with the microscope and for some special lenses. It compensates for some effects mainly caused by compromises in the lens design because of the laws of nature.

Start by capturing or retrieving the reference images.

Reference image 1 should be taken of an equally warm background which is colder than the real object. The same is valid for reference image 2 but the background should be warmer than the real object. Reference images must be taken using the same scanner settings (Lens, filters, temperature range) as in the real measurement situation.

The handling of this filter is by and large the same as for emissivity equalization (see above).

It is recommended that the "average" filter be used when the reference images are captured in order to reduce the noise in them.

The "Gain chart" of the arrow button will create a chart of gain values for every pixel.

The "Offset chart" of the arrow button will create an offset chart from the reference image. The chart will show temperature offset to use for every pixel.

TIME PROCESSING CONTROL

MENU: IR menu - Select source

OPTIONS: Recursive filtering

Averaging

Maxmin

Chopbgd

Named

DESCRIPTION: The "TIME PROCESSING" FILTERS" perform e.g. image noise reduction by Averaging or Recursive filtering. They can also create ficticious images consisting of the max (hottest) or minimum (coldest) pixel values found.

Only one filter can be active at a time.

RECURSIVE FILTER has one parameter, the fraction. The transformation formula is:

$$\text{outPix} = \text{Sum} = \frac{\text{inPix}}{\text{fraction}} + \frac{(\text{fraction} - 1) \times \text{Sum}}{\text{fraction}}$$

This filter can be used for noise reduction in images for not moving objects.

AVERAGE FILTERING has one parameter, the number of images to sum. The filter function adds that number of images to an internal sum. When that number of images

has been added, the result is divided with that number and the image is presented. This filter reduces the noise in the image.

MAXMIN remembers the maximum (or minimum) pixel value per pixel. The constructed image compares already stored pixel values with pixel values coming from the other channel.

If MAX is selected and the new value is higher than the previous value, the new value replaces the old one.

This filter has two options, MAX or MIN.

MAX makes the function remember and show the highest value.

MIN makes the function remember and show the lowest value.

CHOPBGD Chop background filter remembers the first image after start as "background". Then it compares incoming images pixel per pixel. Pixel values that differ more than a given value ied as "object", and passed to the result image. Pixels with values close to the remembered "background" will be considered part of the background and the resulting pixel value will be 0.

The chopbg manipulation filter has one parameter "hysteresis".

This may vary between 1 and 50, and defines the tolerated noise level. The number defines difference between the actual pixel value and the remembered background value required for a pixel to be included in the image.

NAMED - specifying an image filter by name.

The normal way of starting image filtering is to select a filter by pressing buttons in the control panel designed for that type of filter, but, there is also an alternative way.

By selecting NAMED a question panel is produced which asks for a filter name and a parameter string.

This function makes it possible to run filters which are not standard but may have been written for some special purpose.

TOOLBOX

MENU: Top line menu - Toolboxes

OPTIONS:
IR toolbox
Filter toolbox
File toolbox
Macro toolbox

DESCRIPTION: A toolbox is a quicker and more convenient way of controlling the system in cases when only a few commands are used many times.

A toolbox consists of a set of push buttons (tools) with graphical symbols on them, on a panel on the screen. The panel can contain up to 24 tools. Each can have an explanatory line of text, which is shown when the tool is about to be used.

If you sweep with the mouse over the tool buttons slowly and look at the white field of the panel, you will see a short text describing what each tool does. If the white field is missing, the panel has been started with the "No show information" option.

The buttons at the bottom are:

QUIT which removes the panel.

HELP which brings up this text.

IR-1 which makes IR-1 the default IR channel for this toolbox and changes its colour to the IR-1 colour.

IR-2 the same but for IR-2.

Five different toolboxes are delivered with the system.

- o IR toolbox — facilitates analysis of IR images
- o FILE toolbox — gives direct access to file handling commands
- o FILTER toolbox — makes it easier to manipulate IR images

o EQUAL toolbox	a toolbox which makes it easier to handle the equalization functions
o MACRO toolbox	a dummy toolbox just to show you how to start macros from a toolbox.

You start these toolboxes from the TOOLBOXES entry of the top line menu. The function is then mostly carried out directly.

However, some toolbox functions will show a question panel. In such a case use the arrow keys to move the cursor within the field. Use the Delete or Backspace keys to delete the letters to change.

The toolbox name is then typed into the NAME field.

Clicking on the LIST button brings up a window listing the macros available. Select a macro from the list and click the OK button to load this information into the location field of the dialog panel.

Click the OK button in the dialog panel to start the toolbox.

If you click on the 'Show information' button, the toolbox will show information on each tool in the toolbox.

The CANCEL button cancels the function and removes the dialog panel from the screen.

There is also a possibility to define one's own toolboxes.

A toolbox consists of a set of push buttons (tools) with graphical symbols on them, on a panel on the screen. The layout of the panel, the symbols and the actions taken by the system when the buttons are pressed are determined by a toolbox file, with the extension ".TOB". You can edit such files of your own.

The LOCATION appears with just a full stop indicating the current directory. Type if necessary the new directory into the field.

In practice three different types of actions exist:

o An Erika command

o An Erika macro

o An OS-9 command

The panel can contain up to 24 tools. Each has to have a layout definition, a bitmap file for the button symbol, some action to take and an explanatory line of text, that will be shown whenthe tool is about to be used. Like this:

o Tool index	keyword 'TOOL'
o Bitmap file name (and path)	keyword 'BITMAP'
o Tool information text	keyword 'LABEL'
o Action to take	keywords 'COMMAND' 'MACRO' 'OS9' 'MESSAGE'

The tool index must be in the range 1 - 24.

The bitmap file name corresponds to the bitmap to be displayed in the tool button. The bitmap size must be 20x20.

Run the bitmap program from an OS9-window to create a new bitmap:

BITMAP MY_BITMAP.BIT 20x20

The tool information text will be displayed in a window in the toolbox control panel. Max length of this text is 25 characters.

All files (toolbox description file, bitmap files, macro files) should be found at the same location, unless the whole path to the bitmap and macro files is defined in the toolbox file.

A toolbox file:

```
# TOOLBOX test file
#
TOOL      :   1
BITMAP    :   TOOL1.BIT
LABEL     :   Set location to ERIKA
COMMAND   :   SET_LOCATION LOC=/h0/usr/erika
#
TOOL      :   2
BITMAP    :   TOOL2.BIT
LABEL     :   Run a nice macro
MACRO     :   NICE.MAC
#
TOOL      :   10
BITMAP    :   /h0/somewhere_else/TOOL10.BIT
LABEL     :   Start dir of files
OS9       :   ADIR
#
TOOL      :   20
BITMAP    :   TOOL20.BIT
LABEL     :   Quit dir of files
MESSAGE   :   ADIR 194 2 6300
```

The commands of the erika control language, and their syntax, is described in the help texts for topic Erika commands.

Some useful OS9-commands is described in topic OS9-utilities.

Messages should not be used without permission.

If you want to have your own toolbox started by the initialization macro INIT.MAC of Erika, add a START_TOOLBOX command to it.

You can also add your own toolbox to the toolbox menu, if you like.

UNLOCK INPUT

MENU: System menu - Window handling

OPTIONS:

DESCRIPTION

Returns control of window selection to the mouse.

To the left of the resize corner of the window title bar is the **lock input** selection. Clicking on this symbol locks the window selection. All mouse and keyboard actions are performed on the locked window irrespective of the position of the mouse pointer. No other window can be selected until the locked window has been unlocked or the lock has been applied to another window.

Selecting UNLOCK INPUT from the WINDOW HANDLING menu removes the lock from the window and enables window selection to be performed with the mouse.

USER DEFINED MENU

MENU: Background

OPTIONS: Help

DESCRIPTION

This is an example of a user defined menu. In ERIKA 3.0 it only contains one option, which is a help text.

This help text tells the reader about how to edit in the file .agwmrc

The file .agwmrc in the home directory (/H0/USR/ERIKA where you end up when the system is started) contains control information for the window manager of the Erika program, agwm. It is possible and permitted for users to change the content of this file at their own risk.

In .agwmrc one can create menus containing Erika commands as well as OS9 commands. Clicks on the right mouse button on the screen background are especially suited for user menus.

In case the .agwmrc file has been damaged, a copy of the default file exists at /h0/asys/.agwmrc Do never change this file!!!

If Erika is reinstalled, or a new Erika version is installed, your own .agwmrc may become overwritten (destroyed). So in order to avoid this, save it under a separate name, e.g. .agwmrc.my or save it on diskette.

Example

This line, if put under "Pointer Button Definitions", will bind the right button on the background to menu "userdef":

```
Button3 = : root : f.menu "userdef"
```

You can create the new menu and enter it after the "System Menu Tree", if you like:

```
menu "userdef"

{

"MY MENU"          f.title

"My images"        f.funkey
                   "A directory command"

"New spot in IR-1" f.funkey
                   "ADD_SPOT IRCHAN=1,
                   POS=25:25"

"Phase of moon"    !"xphoon -b"

"Set date & time"  f.funkey
                   "SET_DATE_TIME_QP"

}
```

The directory command could be:

```
"DIR_OF_FILES NAME=*.IMG,LOC=/H0/USR/
ERIKA,LFORMAT=TITLE"
```

If you want to execute more than one command, write a macro file and refer to it:

```
"RUN_MACRO LOC=/H0/USR/ERIKA, NAME=name.mac"
```

You have to store .agwmrc on disk and select "Reread .agwmrc" from the menu on the top line of the screen, in order to apply the changes.

This is a somewhat dangerous operation, so do it only with utmost care.

WINDOW HANDLING

MENU: System menu - Window handling

OPTIONS:
Move
Front
Back
Resize
Remove
Unlock input
Open/close
Refresh screen
Dump to file
Copy

DESCRIPTION

Enables operations to be performed on the windows presented on the screen.

For an explanation of the various options available from this menu refer to the individual function descriptions.

A quicker way to bring a window, of which there is only a small part visible, to the front, put the cursor onto that small part and press the Shift button and click with the right mouse button.

It can also be moved by doing as above and then dragging with the mouse.

X DEMO

MENU: System menu - Create window

OPTIONS: Xcalc
Xlogo Ico
Puzzle

DESCRIPTION

These functions are a small demo set from the X Window system. They are provided just for demonstrating a few things which can be done using the X Window system.

Here follows a short 'description' of the provided functions. Try them and enjoy them.

xcalc - scientific calculator for X ported for OS9

xlogo - X Window System logo ported for OS9

ico - animate an icosahedron or other polyhedron ported for OS9

puzzle - 15-puzzle game for X ported for OS9

Thermovision® 900 Appendix

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Thermovision® 900
1. ERIKA
Command List

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ABOUT MACROS IN THV900

Most functions of the Erika software can be controlled via the commands of the Erika command language.

This is a brief description of all commands which are recognized by the Erika software.

There are two main types of commands, dialog panel commands and direct commands. Dialog panel commands produces a popup dialog panel where the user defines the command parameters. The dialog panel then produces the corresponding direct command. The direct command is the second type of command which performs the command function.

There are some syntax restrictions on commands. A command string is maximized to 200 characters. A command can not have more than 20 parameters (no command is even close to that limit) and each parameter can have up to 40 characters. If a parameter value contains spaces then the value must be quoted, e.g. "20:20 á 30:30" which defines a coordinate list.

A few commands have parameters with subvalues. Parameter subvalues are separated from the parameter value by the character "/". A parameter value which specifies external trig has a subvalue specifying which external trig to use, e.g. START=ETRIG/B.

Command parameters must be separated by a comma. There is no comma between the command word and the first parameter. The commands and parameters are not case sensitive.

Many command parameters have a default value. The dialog panel commands remember the last parameter values unless overridden by a new parameter value. Parameters with default values need not be specified if the user is satisfied with the value. Parameter default values are listed below.

A parameter value can start with an environment variable, and this is indicated by the prefix "$". An example:

SET_LOCATION LOC=$HOME/my_subdir

Default value of HOME is /H0/USR/ERIKA. Environment variablesARE case sensitive.

There is one chapter for each command, containing its name,parameters, default values, function and a short example.

COMMAND: ACCEPTANCE & ACCEPTANCE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

START (optional, default = NOW)

Start condition for acceptance control, valid conditions are:

NOW	- Start acceptance immediately.
TIME	- Start at a certain time. (/HH:MM:SS)
KTRIG	- Start on keyboard trig. (/A or /B)
ETRIG	- Start on external trig. (/A, /B, /C or /D)
ATRIG	- Start at alarm trig (/A, /B, /C or /D)

ACCEPT (optional, default = ALL)

Acceptance condition, valid conditions are:

ALL	- Accept all images.
CYCLE	- Accept on time interval. (/HH:MM:SS)
KTRIG	- Accept at keyboard trig. (/A or /B)
ETRIG	- Accept at external trig. (/A, /B, /C or /D)
ATRIG	- Accept at alarm trig (/A, /B, /C or /D)

UNTIL (optional, default = FOREVER)

Stop condition for acceptance, valid conditions are:

FOREVER	- Never stop.
DUR	- Stop after time duration. (/HH:MM:SS)
KTRIG	- Stop at keyboard trig. (/A or /B)
ETRIG	- Stop at external trig. (/A, /B, /C or /D)
ATRIG	- Stop at alarm trig (/A, /B, /C or /D)

DESCRIPTION:

An acceptance control process is started. Images are accepted according to the conditions given in the command. The acceptance control terminates at change of image source. If the acceptance control is not active all images are accepted.

EXAMPLE:

```
ACCEPTANCE IRCHAN=1, START=NOW, ACCEPT=CYCLE/1:00,
        UNTIL=KTRIG/B

ACCEPTANCE_QP IRCHAN=2
```

SEE ALSO: ACCEPT_ON_TRIG ACCEPT_TRIG ACCEPT_ALL

COMMAND: ACCEPT_ALL

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source will accept all images.

EXAMPLE: ACCEPT_ALL IRCHAN=1

SEE ALSO: ACCEPT_ON_TRIG ACCEPT_TRIG ACCEPTANCE

COMMAND: ACCEPT_ON_TRIG

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source will accept images only when trigged.

EXAMPLE: ACCEPT_ON_TRIG IRCHAN=2

SEE ALSO: ACCEPT_ALL ACCEPT_TRIG ACCEPTANCE

COMMAND: ACCEPT_TRIG

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source redistributes last image marked as "accepted".

EXAMPLE: ACCEPT_TRIG IRCHAN=1

SEE ALSO: ACCEPT_ON_TRIG ACCEPT_ALL ACCEPTANCE

COMMAND: ADD_AREA

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ANUM (optional)

Area number index. If not specified the system will choose a free area number.

ATYPE (optional, default=NORMAL)

Area type (NORMAL, BOX, CIRCLE or ELLIPSE).

OPNAME (optional, default=OPSC)

Object parameter set (OPSC, OP01, OP02 ...)

DESCRIPTION:

The command starts the analysis and a result table if not already started. The area is activated as a measurement function. The area is limited by the coordinates defined by the command DEFINE_POSITION_LIST.

If the area already exists it will transform according to the new area parameters and coordinates. Up to 99 areas can be defined.

EXAMPLE: ADD_AREA IRCHAN=1, ATYPE=CIRCLE, ANUM=3

SEE ALSO: DEFINE_POSITION_LIST DEL_AREA AREA_FUNC AREA_RESULTS

COMMAND: ADD_LINE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM (optional)

Line number index. If not specified the system will choose a free line number.

OPNAME (optional, default=OPSC)

Object parameter set (OPSC, OP01, OP02 ...)

DESCRIPTION:

The command starts the analysis and a result table if not already started. The line is activated as a measurement function. The line is limited by the coordinates defined by the command DEFINE_POSITION_LIST. If the line already exists it will transform according to the new line parameters and coordinates. Up to 99 lines can be defined.

EXAMPLE: ADD_LINE IRCHAN=1, LNUM=3, OPNAME=OPSC

SEE ALSO: DEFINE_POSITION_LIST DEL_LINE LINE_FUNC LINE_RESULTS ADD_LINE_CURSOR

COMMAND: **ADD_LINE_CURSOR**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

Line number index.

POS

Line cursor position. Position is defined as X:Y.

SEGMENT (optional, default=0)

Line segment of cursor position. First line segment number is 0.

DESCRIPTION:

Activate a line cursor. The line cursor is visible on the specified line in the IR window and in the line profile window. If the line cursor already is activated the position and segment number of the cursor is updated.

EXAMPLE:

ADD_LINE_CURSOR IRCHAN=1, LNUM=2, POS=12:24, SEGMENT=1

SEE ALSO: ADD_LINE

COMMAND: **ADD_PLOT & ADD_PLOT_QP**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Index of desired plot window (1 - 10).

FUNC

Function to plot (SP01..SP99, AR01..AR99, LI01..LI99).

PLOT

Function result to plot. As of now only temperature (TEMP) for spotmeters. Lines and areas have six different results to plot. Minimum value (MINV), maximum value (MAXV), average (AVER), median (MEDI) and standard deviation (SDEV).

DESCRIPTION:

A plot assignment is sent to specified plot window. There must be a slot in the plot window. The plot window does not check if the result is produced by the analysis.

EXAMPLE: ADD_PLOT IRCHAN=1, NUM=1, FUNC=SP01, PLOT=TEMP

ADD_PLOT IRCHAN=2, NUM=1, FUNC=AR02, PLOT=MINV

ADD_PLOT_QP IRCHAN=1, NUM=2

SEE ALSO: DEL_PLOT STORE_PLOT RECALL_PLOT SCALE_PLOT

COMMAND: ADD_SPOT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SNUM (optional)

Spot number index. If not specified the system will choose a free spot number.

OPNAME (optional, default=OPSC)

Object parameter set (OPSC, OP01, OP02 ...)

POS

Syntax "Xn:Yn Xn+1:Yn+1....."

Xn is pixel column coordinate (from left to right)

Yn is pixel row coordinate (from top to bottom)

DESCRIPTION:

The command starts the analysis and a result table if not already started. The spot is activated as a measurement function. If the spot already exists it will transform according to the new parameters and coordinates. Up to 99 spots can be defined.

EXAMPLE: ADD_SPOT IRCHAN=1, POS=100:100

SEE ALSO: DEL_SPOT

COMMAND: ADJUST_LEVEL_SPAN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Calculates level and span needed to include the image pixel values within the scale limits. If the environment variable AUTO_LS_PERCENT1 (or AUTO_LS_PERCENT2 for IR channel 2) is defined it is used as a measure of the temperature range which will fit into the scale. The new level and span values are sent to the image source.

EXAMPLE: ADJUST_LEVEL_SPAN IRCHAN=1

SEE ALSO: SET_CURRENT_LEVEL_SPAN SET_ADJ_PERCENT

RESET_LEVEL_SPAN SET_LEVEL_SPAN

COMMAND: ALIGN_SCANNER

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start Align Scanner control panel

EXAMPLE: ALIGN_SCANNER IRCHAN=1

SEE ALSO: ALIGN_SCANNER

COMMAND: ALIGN_SUB_IMG

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start Align & Subtract filter control panel

EXAMPLE: ALIGN_SUB_IMG IRCHAN=1

SEE ALSO: IMG-MANIPUL ALIGN_SUBTR_CP ALIGN_FILTER
MAGNIFY_BY_ALIGN SUBTR_FILTER

COMMAND: **APPEND_SEQ_FILE & APPEND_SEQ_FILE_QP**

PARAMETERS: NAME

Name of sequence to append. Must be a sequence file (.SEQ).

LOC (optional, default = .)

Directory name where the file is located.

NEW_NAME

Name on sequence file to which the sequence is appended.

TO_LOC (optional, default = .)

Name of directory where new sequence is located.

DESCRIPTION:

Append an image sequence from a source directory to a sequence located in a destination directory.

EXAMPLE: APPEND_SEQ_FILE NAME=S1, NEW_NAME=S2

APPEND_SEQ_FILE_QP NAME=S1, LOC=/H0/USR

COMMAND: AREA_AUTO_LEVSPAN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ANUM

Area number index (1 to 99).

DESCRIPTION:

The command extracts the extreme values of the area. It then creates a SET_LEVEL_SPAN command matching the max and min of the area. The MAXV and MINV functions need not be active.

EXAMPLE: AREA_AUTO_LEVSPAN IRCHAN=1, ANUM=3

SEE ALSO: SET_LEVEL_SPAN

COMMAND: AREA_FUNC

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ANUM

Area number index.

MINV

Activate (MINV=TRUE) or deactivate (MINV=FALSE) area minimum value. If the parameter is not used the current state prevails.

MAXV

Activate (MAXV=TRUE) or deactivate (MAXV=FALSE) area maximum value. If the parameter is not used the current state prevails.

DIFF

Activate (DIFF=TRUE) or deactivate (DIFF=FALSE) the calculation of the difference between the maximum and minimum values. If the parameter is not used the current state prevails.

AVER

Activate (AVER=TRUE) or deactivate (AVER=FALSE) area average value. If the parameter is not used the current state prevails.

SDEV

Activate (SDEV=TRUE) or deactivate (SDEV=FALSE) area standard deviation. If the parameter is not used the current state prevails.

MEDI

Activate (MEDI=TRUE) or deactivate (MEDI=FALSE) area median value. If the parameter is not used the current state prevails.

HIST

Activate (HIST=TRUE) or deactivate (HIST=FALSE) area histogram. If the parameter is not used the current state prevails.

FREQ (Not yet implemented)

Activate (FREQ=TRUE) or deactivate (FREQ=FALSE) area frequency table. If the parameter is not used the current state prevails.

METRIC

Activate (METRIC=TRUE) or deactivate (METRIC=FALSE) area size. Area size is measured in square meters (m2) or millimeters (mm2). If the parameter is not used the current state prevails.

DESCRIPTION:

Activates or deactivates area measurements tasks. Deactivation of a non-existing task will not cause an error report.

EXAMPLE:

AREA_FUNC IRCHAN=1, ANUM=10, MINV=TRUE, MAXV=TRUE, DIFF=TRUE

AREA_FUNC IRCHAN=1, ANUM=1, SDEV=FALSE, MEDI=TRUE, AVER=FALSE

AREA_FUNC IRCHAN=1, ANUM=2, HIST=TRUE, METRIC=FALSE

SEE ALSO: ADD_AREA AREA_RESULTS

COMMAND: AREA_RESULTS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ANUM

Area number.

EXTR (optional, default=FALSE)

Activate area extreme values if TRUE.

STAT (optional, default=FALSE)

Activate area statistics if TRUE.

HIST (optional, default=FALSE)

Activate area histogram if TRUE.

METRIC (optional, default=FALSE)

Activate area metric size function if TRUE. The size of the area is shown in square meters (m2) or square millimeters (mm2).

DESCRIPTION:

A dialog panel allows the operator to choose the area results to present in the result table. The area results are activated or deactivated according to the panel choices.

EXAMPLE: AREA_RESULTS_QP IRCHAN=1, ANUM=1, EXTR=TRUE

SEE ALSO: ADD_AREA AREA_FUNC

COMMAND: **BACKUP & BACKUP_QP**

PARAMETERS: LOC

Subtree to backup.

DEVICE

Device to store backup on - /mt0 for tape and /d0 for floppy.

AFORMAT

Archive format: TAR or MIW (Microware fsave format).

PATTERN

Backup pattern. This is used to select files to backup (tar format only). A wildcard selection can be given of files to backup. More than one selection can be given, delimiter is <space>. If all files should be backed up, don't use this parameter.

DESCRIPTION:

Creates a control panel from which a backup can be performed.

EXAMPLE: BACKUP LOC=/H0, DEVICE=/MT0, AFORMAT=TAR

BACKUP_QP DEVICE=/MT0, AFORMAT=TAR, PATTERN="A*.IMG B*.IMG"

BACKUP_QP

SEE ALSO: RESTORE & RESTORE_QP

COMMAND: BASE_TIME & BASE_TIME_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

TIME (optional, default = CURRENT)

Image base time. Valid values are:

CURRENT = Use current image time.

HH:MM:SS = User defined time.

UPDATE (optional, default = NOW)

Update condition. Controls when to update image base time. Valid conditions are:

NOW - Update immediately.

KTRIG - Update on keyboard trig. (/A or /B)

ETRIG - Update on external trig. (/A, /B, /C or /D)

ATRIG - Update on alarm trig (/A, /B, /C or /D)

DESCRIPTION:

A control panel is started and waits for the update event.

If the update event is NOW base time is set at once and no control panel is shown.

EXAMPLE: BASE_TIME IRCHAN=1, TIME=CURRENT, UPDATE=NOW

BASE_TIME_QP IRCHAN=2

SEE ALSO: RESET_BASE_TIME SET_BASE_TIME KEEP_BASE_TIME

COMMAND: BOTH_EQUALIZE_CONTROL

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start emissivity and reflected ambient equalize filter control panel.

EXAMPLE: BOTH_EQUALIZE_CONTROL IRCHAN=1

SEE ALSO: EM_EQUALIZE_CONTROL RAMB_EQUALIZE_CONTROL

COMPLETE_SEQ

COMMAND: CATS_CONV & CATS_CONV_QP

PARAMETERS: NAME

Name of file(s) to copy. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Directory name where the file(s) is located.

NEW_NAME (optional)

New name on destination file. Do not define this field if wildcards specified in NAME.

TO_LOC (optional, default = .)

Name of directory where files are converted to.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

DESCRIPTION:

Convert one or more CATS image files from a source directory to a destination directory.

EXAMPLE:

```
CATS_CONV NAME=*.IMG, TO_LOC=/H0/USR/
ERIKA/IMAGES, OVWR=TRUE CATS_CONV LOC=/
D0, NAME=T1.IMG, TO_LOC=.,
NEW_NAME=T1E.IMG
```

COMMAND: CHANGE_OBJPAR_SET&
CHANGE_OBJPAR_SET_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

FUNC

Function to change (SP01..SP99, AR01..AR99, LI01..LI99).

OPNAME

Object parameter set. (OPyyxx, OPSC or OWN; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

This command changes object parameter set for a given analysis function.

EXAMPLE:

CHANGE_OBJPAR_SETIRCHAN=1,FUNC=SP01,OPNAME=OPAR07

COMMAND: COMPANYLABEL & COMPANYLABEL_QP

PARAMETERS: NAME

Name of text file to display in label window.

LOC (option, default = .)

Name of directory where text file is located.

BITMAP

Name of bitmap file. Bitmap is displayed left of the text.

BITMAP_LOC

Name of directory where bitmap file is located.

DESCRIPTION:

Displays a text file and, if specified, a bitmap.

EXAMPLE:

COMPANY_LABEL NAME=LABEL.TXT, LOC=/H0/USR/ERIKA

COMPANY_LABEL_QP

SEE ALSO: SHOW_TEXT REMOVE_SHOW_TEXT

COMMAND: COMPLETE_SEQ

PARAMETERS: NAME

Name of image sequence.

LOC (optional, default = .)

Directory name where the file(s) is located.

CONFIRM (optional, default = TRUE)

Confirm before executing command (TRUE).

DESCRIPTION:

This function can reconstruct the first image in a sequence, as the first image may be impossible to take.

EXAMPLE:

COMPLETE_SEQ NAME=BADFIRST, LOC=IMAGES, CONFIRM=TRUE

SEE ALSO: EM_EQUALIZE_CONTROL RAMB_EQUALIZE_CONTROL

BOTH_EQUALIZE_CONTROL

COMMAND: CONTROL_SOUND

PARAMETERS: VOLUME

Loudspeaker volume: 0 - 100.

DESCRIPTION:

Controls the loudspeaker volume.

EXAMPLE: CONTROL_SOUND VOLUME=58

SEE ALSO: MAKE_SOUND SAMPLE_SOUND

COMMAND: CONVERTLINES & CONVERTLINES_QP

PARAMETERS: NAME

Name of source line file (.LIN).

LOC (optional, default = .)

Directory name where the source file is located.

NEW_NAME

Name on destination line file (.LIN).

TO_LOC (optional, default = .)

Name of destination directory.

DESCRIPTION:

Create or modify a line file convertlines control panel.

EXAMPLE:

CONVERTLINES LOC=/B0, NAME=T1, TO_LOC=/B0, NEW_NAME=T2

CONVERTLINES_QP

COMMAND: **COPY_ALARM**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Alarm id 1 - 20 identifying a specific alarm to copy

DESCRIPTION:

Copies alarm with alarmid = NUM to first free alarmid.

EXAMPLE:

COPY_ALARM IRCHAN=1, NUM=2

COMMAND: **COPY_FILE & COPY_FILE_QP**

PARAMETERS: NAME

Name of file(s) to copy. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Directory name where the file(s) is located.

NEW_NAME (optional)

New name on destination file. Do not define this field if wildcards specified in NAME.

TO_LOC (optional, default = .)

Name of directory where files are copied to.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

DOS (optional, default = FALSE)

Rename file according to DOS file naming rules. If TRUE then rename file if necessary.

DESCRIPTION:

Copy one or more files from a source directory to a destination directory.

EXAMPLE:

```
COPY_FILE NAME=*.IMG, TO_LOC=/D0, OVWR=TRUE

COPY_FILE NAME=TEST_000?.IMG, TO_LOC=/DOS, DOS=TRUE

COPY_FILE_QP LOC=/H0/USR
```

COMMAND: COPY_SEQ_FILE & COPY_SEQ_FILE_QP

PARAMETERS: NAME

Name of file to copy. Must be a sequence file (.SEQ).

LOC (optional, default = .)

Directory name where the file is located.

BEGIN

Start index of image sequence to copy. (1 .. 99999).

END

End index of image sequence to copy. (1 .. 99999).

NEW_NAME

Name on destination file.

TO_LOC (optional, default = .)

Name of directory where sequence is copied to.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing sequence.

DOS (optional, default = FALSE)

Rename file according to DOS file naming rules. If TRUE then rename file if necessary.

DESCRIPTION:

Copy an image sequence from a source directory to a destination directory. The copied images will get new image numbers.

EXAMPLE:

COPY_SEQ_FILE NAME=S1, BEGIN=300, END=500, TO_LOC=/OPT0

COPY_SEQ_FILE_QP LOC=/H0/USR

COMMAND: CREATE_CLOCK_WINDOW

PARAMETERS: X (optional)

Clock window x-position.

Y (optional)

Clock window y-position.

XSIZE (optional)

Clock window width in pixels.

YSIZE (optional)

Clock window height in pixels.

TYPE (optional, default = ANALOG)

Clock type ANALOG or DIGITAL.

UPDATE (optional, default = MINUTE)

SECOND or MINUTE (only if type is ANALOG).

DESCRIPTION:

Start digital or analog clock window.

EXAMPLE:

CREATE_CLOCK_WINDOW TYPE=ANALOG, UPDATE=SECOND

CREATE_CLOCK_WINDOW X=0, Y=100, XSIZE=100, YSIZE=100

SEE ALSO: SET_DATE_TIME

COMMAND: CREATE_IRWINDOW & CREATE_IRWINDOW_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

PRES (optional)

Presentation type. Choose TEMP or OBJECTSIGNAL.

TUNIT (optional)

Temperature type. Recognized values are KELVIN, CELSIUS or FAHRENHEIT

DESCRIPTION:

Create an IR window with corresponding IR channel. If parameters PRES and TUNIT are not defined the environment variable PRESUNIT is used to control the unit of presentation.

If PRESUNIT is undefined it will default to OBJECTSIGNAL.

EXAMPLE:

CREATE_IRWINDOW IRCHAN=1, PRES=TEMP, TUNIT=KELVIN

CREATE_IRWINDOW_QP IRCHAN=2

SEE ALSO: TERMINATE_IRCHAN

COMMAND: CREATE_RAD_RESTAB

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Create another radiance result window. Normally, a window is started when the radiance analysis starts.

This command is mainly used to create extra result windows.

A result window cannot be created if the analysis is inactive.

EXAMPLE: CREATE_RAD_RESTAB IRCHAN=1

SEE ALSO: START_ANALYSIS

COMMAND: CREATE_RESULTTAB

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Create an analysis result table. Normally, a result table is started when creating the first analysis measurement task. This command is mainly used to create extra result tables. A result table cannot be created if the analysis is inactive.

EXAMPLE: CREATE_RESULTTAB IRCHAN=1

SEE ALSO: START_ANALYSIS

COMMAND: CUSTOMDATA

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

User defined data is formatted and presented on the screen.

The data is part of the image data and distributed by the scanner image source. The data format file is located in the HOME directory and is named ".customformat".

The utility function "setcustom" tells the scanner image source how to update the user defined data field.

EXAMPLE: CUSTOMDATA IRCHAN=1

COMMAND: DEFINE_ALARM & DEFINE_ALARM_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Alarm id 1 - 20 identifying a specific alarm.

If 0 or not used, first free alarm id will be used.

FUNC

Function to alarm on (SP01..SP99, AR01..AR99, LI01..LI99).

SUBFUNC

Function result to alarm on. As of now only temperature (TEMP) for spotmeters. Lines and areas have six different results to alarm on. Minimum value (MINV), maximum value (MAXV), average (AVER), median (MEDI) and standard deviation (SDEV).

MAX (optional, default not used)

Upper alarm limit. If monitored result is higher than this value, alarm will be activated. Limit is not used at all if not present in command.

MIN (optional, default not used)

Lower alarm limit. If monitored result is lower than this value, alarm will be activated. Limit is not used at all if not present in command.

TRIG_IN (optional, default not used)

Alarm trig (ATRIG) to give when passing into alarmed condition. Possible values are A,B,C or D.

TRIG_OUT (optional, default not used)

Alarm trig (ATRIG) to give when passing out of alarmedcondition. Possible values are A,B,C or D.

OUTPUT (optional, default = NOOUT)

When to give output (only for accepted images). Possiblevalues are: NOOUT, IN, OUT, IN_OUT or CONT

INTERVAL (optional, default = 0)

Used when OUTPUT=CONT. Interval in seconds between alarm outputs.

BEEP (optional, default = FALSE)

Beep on the speaker. If TRUE a sound will be heared for all alarm outputs from condition.

LOGNAME (optional, default = "", not active)

Free text to use on alarm logs.

EXTOUT (optional, default = 0)

External output pin A - D to activate on alarm. 0 means no pin.

"A" - "D" means alarm condition level on corresponding pin A - D.

A following "P" ("AP", "BP",...) means pulse only on corresponding output pin.

CMDTYPE (Optional, default = NOCMD)

Typeof command to give on alarm output. NOCMD means no command.

ERIKA means erika command

OS9 means os9 command

CMD (Optional, default not used)

Command to give interpreted according to CMDTYPE

DESCRIPTION:

Define a new / redefine existing alarm.

EXAMPLE:

```
DEFINE_ALARM IRCHAN=1, FUNC=AR02,
SUBFUNC=AVER, MAX=30.0, OUTPUT=IN,
BEEP=TRUE,LOGNAME="Upper corner", EXTOUT=C

DEFINE_ALARM_QP IRCHAN=1, FUNC=SP02
```

COMMAND: DEFINE_POSITION_LIST

PARAMETERS: POS

List of coordinates (Xn:Yn Xn+1:Yn+1 ....).

NEW (optional, default = FALSE)

New list flag. If TRUE then reset coordinate list, otherwise append to existing list.

DESCRIPTION:

Define the current list of coordinates. The list is used when defining the shape of an area or a line.

EXAMPLE:

```
DEFINE_POSITION_LIST POS="0:0 10:10 10:0", NEW=TRUE

DEFINE_POSITION_LIST POS="3:4 23:0 15:8"
```

SEE ALSO: ADD_AREA ADD_LINE

COMMAND: DELETE_ALARM

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Alarm id 1 - 20 identifying a specific alarm to remove

DESCRIPTION:

Deletes alarm with alarmid = NUM.

EXAMPLE: DELETE_ALARM IRCHAN=1, NUM=2

COMMAND: DEL_AREA

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ANUM
Area number.

DESCRIPTION:

Delete specified area. If the area does not exist nothing happens.

EXAMPLE: DEL_AREA IRCHAN=2, ANUM=11

SEE ALSO: ADD_AREA

COMMAND: DEL_LINE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

Line number.

DESCRIPTION:

Delete specified line. If the line does not exist nothing happens.

EXAMPLE: DEL_LINE IRCHAN=2, LNUM=32

SEE ALSO: ADD_AREA

COMMAND: DEL_LINE_CURSOR

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

Line number.

DESCRIPTION:

Removes the line cursor from the IR window, from the line profile window and from the result table. Nothing happens if the line cursor is already removed.

EXAMPLE: DEL_LINE_CURSOR IRCHAN=1, LNUM=3

SEE ALSO: ADD_LINE_CURSOR

COMMAND: DEL_PLOT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Plot window number (1 - 10).

FUNC

Plot symbol (SP01..SP99, AR01..AR99, LI01..LI99).

PLOT

Plot result to remove. For spotmeter only temperature (TEMP), for areas and lines the choices are: minimum value (MINV), maximum value (MAXV), difference (DIFF), average (AVER), median (MEDI) and standard deviation (SDEV).

DESCRIPTION:

A plot removal message is sent to specified plot window. No error report is given if the plot task does not exist.

EXAMPLE: DEL_PLOT IRCHAN=1, NUM=1, FUNC=LI09, PLOT=AVER

DEL_PLOT IRCHAN=2, NUM=1, FUNC=SP15, PLOT=TEMP

SEE ALSO: ADD_PLOT

COMMAND: DEL_SPOT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SNUM (optional, default=first found)

Spotmeter number.

DESCRIPTION:

Remove specified spotmeter. No error report if the spotmeter is inactive.

EXAMPLE: DEL_SPOT IRCHAN=1, SNUM=13 DEL_SPOT IRCHAN=2

SEE ALSO: ADD_SPOT

COMMAND: DELETE_DIR & DELETE_DIR_QP

PARAMETERS: NAME

Name of target directory to delete.

LOC (optional, default = .)

Name of directory where target directory is located.

DESCRIPTION:

Delete a directory. The directory must be empty. Current directory cannot be deleted.

EXAMPLE: DELETE_DIR NAME=SUBDIR, LOC=MACROS

DELETE_DIR_QP

SEE ALSO: MAKE_DIR

COMMAND: DELETE_FILE & DELETE_FILE_QP

PARAMETERS: NAME

Name of file(s) to delete. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Directory name where the file or files are located.

CONFIRM (option, default = ALL)

Confirm deleted files. The options are:

- ALL : Display a control panel and interactively choose the file(s) to delete.
- NONE: Delete without confirm.

DESCRIPTION:

Delete one or more files from a directory.

EXAMPLE:

```
DELETE_FILE NAME=*.MAC, LOC=MACROS, CONFIRM=ALL

DELETE_FILE_QP NAME=FOO, CONFIRM=NONE
```

COMMAND: **DIR_OF_DIR & DIR_OF_DIR_QP**

PARAMETERS: NAME

Name of target directories to list.

Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Name of directory where target directories are located.

DESCRIPTION:

Creates a window and displays directory lists.

EXAMPLE: DIR_OF_DIR NAME=*, LOC=.

DIR_OF_DIR_QP LOC=/D0

COMMAND: DIR_OF_FILES & DIR_OF_FILES_QP

PARAMETERS: NAME

Name of file(s) to list. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Name of directory where the files are located.

LFORMAT (optional, default = NAME)

Recognized values are:

- NAME: Show list with file names.
- TITLE: Show list with file names and file titles.
- DETAILED: Show list with file names and file attributes.

DESCRIPTION:

Creates a window with a list of files (directories excluded).

EXAMPLE:

```
DIR_OF_FILES NAME=*.TXT, LOC=USR, LFORMAT=TITLE

DIR_OF_FILES_QP LFORMAT=DETAILED
```

COMMAND: DOS_COPY & DOS_COPY_QP & DOS_CONVERT_QP

PARAMETERS: NAME

Name of file(s) to copy. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Name of directory where the source files are located.

NEW_NAME (optional)

New name on destination file. Do not define this field if wildcards are specified in NAME. Ignored if UPSRC = TRUE.

TO_LOC (optional, default = .)

Name of directory where files are copied to. Ignored if UPSRC = TRUE.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

DOS (optional, default = FALSE)

Rename file according to DOS file naming rules. If TRUE then rename file if necessary.

DIRECT (optional, default = TO_DOS)

Indicates direction of copying (TO_DOS or TO_OS9). Converts files according to specified direction.

CONV_ALL (optional, default = FALSE)

Convert all files if TRUE. Unknown file types are treated as text files.

UPSRC (optional, default = FALSE)

Update source files. Source files are converted and updated if this flag is TRUE. If TRUE then TO_LOC and NEW_NAME is ignored.

DESCRIPTION:

Converts (and copies) one or more files from a source directory to a destination directory. Image files changes extensions after conversion. (.IMG in OS9 and .IMD in DOS).

EXAMPLE:

DOS_COPY NAME=*.IMG, TO_LOC=/DOS, DIRECT=TO_DOS, DOS=TRUE

DOS_CONVERT_QP NAME=*.IMG, UPSRC=TRUE, LOC=.

DOS_COPY_QP

SEE ALSO: COPY_FILE

COMMAND: **DUMP_AREA & DUMP_AREA_QP**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Dump file name. Extension (.DMP) is added to file name if missing.

LOC (optional, default = .)

Name of directory where dump file is located.

ANUM

Area number of area to stored. Area must be a box.

OVWR (optional, default = FALSE)

Overwrite existing file if TRUE.

DESCRIPTION:

The "dump area" function writes values of all pixels inside the selected box area to file. Pixels are dumped as ascii text in current temperature unit.

Columns are separated with TAB, rows are separated with

NEWLINE. It is possible to r

EXAMPLE:

DUMP_AREA IRCHAN=1, NAME=BOX1, LOC=/H0/ASYS/LIB, ANUM=2

DUMP_AREA_QPIRCHAN=1

COMMAND: DUMP_IMAGE & DUMP_IMAGE_QP

PARAMETERS: NAME

Image file name. Extension (.IMG) is added to file name if missing.

LOC (optional, default = .)

Name of directory where image file is located.

DESCRIPTION:

The contents of the image file are presented (pixel data excluded) in a scrollable window.

EXAMPLE: DUMP_IMAGE NAME=NOP, LOC=/H0/ASYS/LIB

DUMP_IMAGE_QP

COMMAND: ECALC_OBJPARS & ECALC_OBJPARS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SHOWN

Shown temperature for a measurement point, specified in the current presentation unit.

KNOWN

Known temperature of the same measurement point.

CONFIRM (optional, default=YES)

Confirm calculated emissivity factor if YES, otherwise NO.

DESCRIPTION:

Calculate a new emissivity factor on the basis of the temperature known by the operator and the temperature shown by the system. The function is connected to the object parameters of the scale.

EXAMPLE:

ECALC_OBJPARS IRCHAN=1, SHOWN=32, KNOWN=36, CONFIRM=YES

ECALC_OBJPARS_QP IRCHAN=2

COMMAND: EDIT_COMMENT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start an image comment editor. The editor requests the comment from the current image source and displays it. The comment may now be edited freely and after clicking on the OK button the new comment is sent to the image source.

EXAMPLE: EDIT_COMMENT IRCHAN=1

SEE ALSO: RESET_COMMENT KEEP_COMMENT

COMMAND: EDIT_OBJPARS & EDIT_OBJPARS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

EPS

Emissivity of object.

TAO_EST

Estimated transmittance. If 0 then do not use this value.

TATM

Atmospheric temperature (current presentation unit)

TAMB

Ambient temperature (current presentation unit)

DOBJ

Object distance in meters.

RELHUM

Relative humidity in percent.

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

Edit object parameters. Each parameter is checked against its limits, illegal combinations are not detected. The current image source is updated with the new object parameters.

Command will return other command SET_OBJPARS.

Observe the difference that SET_OBJPARS always uses KELVIN instead of current presentation unit.

EXAMPLE: EDIT_OBJPARS IRCHAN=1, EPS=0.98, TATM=25, DOBJ=20, OPNAME=OPAR11 EDIT_OBJPARS_QP IRCHAN=1, RELHUM=70

SEE ALSO: SET_OBJPARS SET_CURRENT_OBJPARS RECALL_OBJPARS

COMMAND: EDIT_OFFSET

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Starts a panel for offset correction control. The current offset is presented and can be changed by pressing different buttons. Each time the offset is corrected the new value is sent to the current image source.

EXAMPLE: EDIT_OFFSET IRCHAN=2

SEE ALSO: SET_OFFSET KEEP_OFFSET RESET_OFFSET

COMMAND: **EDIT_TEXT_FILE & EDIT_TEXT_FILE_QP**

PARAMETERS: NAME

Name of text file to edit.

LOC (optional, default = .)

Name of directory where text file is located.

DESCRIPTION:

Creates a window for text file editing.

EXAMPLE: EDIT_TEXT_FILE NAME=.LOGIN

EDIT_TEXT_FILE_QP

COMMAND: EM_EQUALIZE_CONTROL

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start emissivity equalize filter control panel.

EXAMPLE: EM_EQUALIZE_CONTROL IRCHAN=1

SEE ALSO: RAMB_EQUALIZE_CONTROL BOTH_EQUALIZE_CONTROL

COMPLETE_SEQ

COMMAND: FILTER

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of filter file.

LOC (optional, default = .)

Name of directory where filter file is located.

DESCRIPTION:

Starts a control panel for choosing manipulating filters for images transferred between IR channels.

EXAMPLE:

FILTER IRCHAN=2, LOC=$ASYS/LIB, NAME=FILTER_A.SYS

SEE ALSO: SHOW_OTHERCHAN

COMMAND: FREEZE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source will freeze the image flow.

EXAMPLE: FREEZE IRCHAN=1

SEE ALSO: UNFREEZE FREEZE_TOGGLE

COMMAND: FREEZE_TOGGLE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source toggles the freeze/unfreeze switch.

EXAMPLE: FREEZE_TOGGLE IRCHAN=1

SEE ALSO: UNFREEZE FREEZE

COMMAND: GET_OBJPARS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

Fetch object parameters from current image source. The parameters are returned in the reply string of the command.

EXAMPLE:

GET_OBJPARS IRCHAN=1

GET_OBJPARS IRCHAN=2, OPNAME=OPLI02

COMMAND: **HELPS**

PARAMETERS: SWORD (optional, default = "Topics list")

Search word to help utility.

DESCRIPTION:

Starts help utility.

EXAMPLE: HELPS SWORD=Area

HELPS

COMMAND: IMAGE_SCANNER_DATA

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Display scanner information continuously in a scrollable window.

EXAMPLE: IMAGE_SCANNER_DATA IRCHAN=1

SEE ALSO: SCANNER_CONTENT

COMMAND: **INTERLACE & INTERLACE_QP**

PARAMETERS: SWITCH (optional, default = OFF)

Interlace ON or OFF.

DESCRIPTION:

Enable or disable interlace mode. The VGA diode on the front panel is lighted green if interlace mode is OFF.

EXAMPLE: INTERLACE SWITCH=OFF

INTERLACE_QP SWITCH=ON

COMMAND: **IR_STATUS**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Creates a status window which continuously reports information contained in the image. E.g. level, span, object parameters etc.

EXAMPLE: IR_STATUS IRCHAN=1

COMMAND: **ISOTHERM_HANDLING & ISOTHERM_HANDLING_QP**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

ISO1 (optional, default = current setting)

Isotherm 1 switch. Values are ON or OFF.

ISO1VAL (optional, default = current setting)

Value of isotherm 1. Value is given in current presentation unit.

ISO1TYPE (optional, default = current setting)

Type of isotherm:

- ABOVE: highlight from ISO1VAL and above.
- BELOW: highlight from ISO1VAL and below.
- INT: highlight from ISO1VAL and below with width=ISO1INT.

ISO1INT (optional, default = current setting)

Isotherm 1 width. (Only used if ISO1TYPE = INT).

ISO2 (optional, default = current setting)

Isotherm 2 switch. Values are ON or OFF.

ISO2VAL (optional, default = current setting)

Value of isotherm 2. Value is given in current presentation unit.

ISO2TYPE (optional, default = current setting)

Type of isotherm:

- ABOVE: highlight from ISO2VAL and above.
- BELOW: highlight from ISO2VAL and below.
- INT: highlight from ISO2VAL and below with width=ISO2INT.

ISO1INT (optional, default = current setting)

Isotherm 1 width. (Only used if ISO1TYPE = INT).

DESCRIPTION:

Activate or deactivate isotherms 1 and 2.

EXAMPLE:

ISOTHERM_HANDLING IRCHAN=1, ISO1=ON, ISO1TYPE=INT, ISO1INT=5, ISO1VAL=20

ISOTHERM_HANDLING IRCHAN=1, ISO2=ON, ISO2TYPE=BELOW, ISO1VAL=25

ISOTHERM_HANDLING_QP IRCHAN=2

COMMAND: KEEP_BASE_TIME

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source is ordered to use the current image reference time for all images until change of image source.

EXAMPLE: KEEP_BASE_TIME IRCHAN=1

SEE ALSO:

RESET_BASE_TIME SET_BASE_TIME TIMER_CONTROL.

COMMAND: KEEP_COMMENT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source is ordered to use the current image comment for all images until change of image source.

EXAMPLE: KEEP_COMMENT IRCHAN=1

SEE ALSO: RESET_COMMENT EDIT_COMMENT

COMMAND: KEEP_OFFSET

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source is ordered to use the current offset correction for all images until change of image source.

EXAMPLE: KEEP_OFFSET IRCHAN=1

SEE ALSO: SET_OFFSET EDIT_OFFSET RESET_OFFSET

COMMAND: LINE_FUNC

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

Line number index.

MINV

Activate (MINV=TRUE) or deactivate (MINV=FALSE) line minimum value. If the parameter is not used the current state prevails.

MAXV

Activate (MAXV=TRUE) or deactivate (MAXV=FALSE) line maximum value. If the parameter is not used the current state prevails.

DIFF

Activate (DIFF=TRUE) or deactivate (DIFF=FALSE) the calculation of the difference between the maximum and minimum values. If the parameter is not used the current state prevails.

AVER

Activate (AVER=TRUE) or deactivate (AVER=FALSE) line average value. If the parameter is not used the current state prevails.

SDEV

Activate (SDEV=TRUE) or deactivate (SDEV=FALSE) line standard deviation. If the parameter is not used the current state prevails.

MEDI

Activate (MEDI=TRUE) or deactivate (MEDI=FALSE) line median value. If the parameter is not used the current state prevails.

HIST

Activate (HIST=TRUE) or deactivate (HIST=FALSE) line histogram. If the parameter is not used the current state prevails.

PROF

Activate (PROF=TRUE) or deactivate (PROF=FALSE) line profile. If the parameter is not used the current state prevails.

LEN

Activate (LEN=PIXEL or LEN=METRIC) or deactivate (LEN=NONE) line length function. The line length is calculated in meters/millimeters (METRIC) or in screen pixels (PIXEL).

FREQ (Not yet implemented)

Activate (FREQ=TRUE) or deactivate (FREQ=FALSE) line frequency table. If the parameter is not used the current state prevails.

DESCRIPTION:

Activates or deactivates line measurements tasks. Deactivation of a non-existing task will not cause an error report. All calculated results are shown in the result table.

EXAMPLE:

LINE_FUNC IRCHAN=1, LNUM=10, MINV=TRUE, MAXV=TRUE, DIFF=TRUE

LINE_FUNC IRCHAN=1, LNUM=1, SDEV=FALSE, MEDI=TRUE, PROF=FALSE

LINE_FUNC IRCHAN=1, LNUM=2, HIST=TRUE, LEN=METRIC

SEE ALSO: ADD_LINE LINE_RESULTS

COMMAND: LINE_RESULTS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

Line number.

EXTR (optional, default=FALSE)

Activate line extreme values if TRUE.

STAT (optional, default=FALSE)

Activate line statistics if TRUE.

HIST (optional, default=FALSE)

Activate line histogram if TRUE.

PROF (optional, default=FALSE)

Activate line profile if TRUE.

LEN (optional, default=NONE)

Select display mode of line length in the result table.

NONE	Deactivate line length calculation
PIXEL	Line length in screen pixels.
METRIC	Line length in meters (m) or millimeters (mm).

DESCRIPTION:

A dialog panel allows the operator to choose which line results to present in the result table. The line results are activated or de- activated according to the panel choices.

EXAMPLE:

LINE_RESULTS_QP IRCHAN=1, LNUM=1, STAT=TRUE, HIST=TRUE

LINE_RESULTS_QP IRCHAN=1, LNUM=2, LEN=NONE

SEE ALSO: LINE_FUNC ADD_LINE

COMMAND: MAKE_DIR & MAKE_DIR_QP

PARAMETERS: NAME

Name of target directory to create.

LOC (optional, default = .)

Name of directory where target directory is to be created

DESCRIPTION:

Create a directory.

EXAMPLE:

MAKE_DIR NAME=LENNY, LOC=/H0/USR

MAKE_DIR_QP

SEE ALSO: DELETE_DIR

COMMAND: MAKE_SOUND

PARAMETERS: FREQUENCY

Frequency of the sound (in Hz).

DURATION

Duration of the sound (in 128ths of a second).

DESCRIPTION:

Makes the loudspeaker sound.

EXAMPLE: MAKE_SOUND FREQUENCY=440, DURATION=64

SEE ALSO: CONTROL_SOUND

COMMAND: MOVE_FILE & MOVE_FILE_QP

PARAMETERS: NAME

Name of source file(s) to move. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Name of directory where the source files are located.

NEW_NAME (optional)

New name on destination file. Do not define this field if wildcards are specified in NAME.

TO_LOC (optional, default = .)

Name of directory where files are moved.

DOS (optional, default = FALSE)

Rename file according to DOS file naming rules. If TRUE then rename file if necessary.

DESCRIPTION:

Move one or more files from a source directory to a destination directory.

EXAMPLE:

```
MOVE_FILE NAME=*.HIS, TO_LOC=../ERIKA
MOVE_FILE_QP DOS=FALSE
```

COMMAND: **PERIODIZE**

PARAMETERS: NAME

Name of source line file (.LIN).

LOC (optional, default = .)

Directory name where the source file is located.

TO_LOC (optional, default = LOC)

Name of destination directory.

NEW_NAME (optional, default = PERIOD.LIN)

Name on destination line file (.LIN).

LINES (optional, default = 100)

Number of lines wanted in result file

OVWR (optional, default = FALSE, except if

NEW_NAME == PERIOD.LIN, and TO_LOC not given)

Overwrite existing file. If TRUE then overwrite any existing file.

MATCHTOL (optional, default = 0)

Tolerated match line distance, 0 - 3. This is max. distance from ideal line (in lines) for a line from source to be able to match

INTERPOL (optional, default = FALSE)

If TRUE, Create not matched lines in result. Interpolation is made after all lines in source are matched to target (using tolerance). Linear interpolation is used to create unmatched lines from adjacent, matched lines

FIRSTTRIG (optional, default = 0)

Only try to match lines with trig value greater than FIRSTTRIG relative start of source line sequence.

MAXTRIGS (optional, default no limit)

Only try to match lines with trig value lower than FIRSTTRIG + MAXTRIGS

DESCRIPTION:

Convert a line sequence file from a rotating (or cyclic moving in some other way) object containing trig information to a new line sequence describing a "medium" rotation cycle.

The object should rotate with constant speed.

EXAMPLE:

PERIODIZE LOC=/
b0,NAME=acc,NEW_NAME=pacc,LINES=1000,MAXTRIGS=10

COMMAND **PERIODIZE2**

PARAMETERS: NAME

Name of source line file (.LIN).

LOC (optional, default = .)

Directory name where the source file is located.

TO_LOC (optional, default = LOC)

Name of destination directory.

NEW_NAME (optional, default = PERIOD.LIN)

Name on destination line file (.LIN).

LINES (optional, default = 100)

Number of lines wanted in result file

OVWR (optional, default = FALSE, except if

NEW_NAME == PERIOD.LIN and TO_LOC not given)

Overwrite existing file. If TRUE then overwrite any existing file.

MATCHTOL (optional, default = 0)

Tolerated match line distance, 0 - 3. This is max. distance from ideal line (in lines) for a line from source to be able to match

INTERPOL (optional, default = FALSE)

If TRUE, Create not matched lines in result. Interpolation is made after all lines in source are matched to target (using tolerance). Linear interpolation is used to create unmatched lines from adjacent, matched lines

FIRSTTRIG (optional, default = 0)

Only try to match lines with trig value greater than FIRSTTRIG relative start of source line sequence.

MAXTRIGS (optional, default no limit)

Only try to match lines with trig value lower than FIRSTTRIG + MAXTRIGS

LOWSPEED (optional, default 0)

Only try to match lines from cycles with rotation speed greater than LOWSPEED (in Revolutions per Minute, RPM)

HIGHSPEED (optional, default no limit)

Only try to match lines from cycles with rotation speed lower than HIGHSPEED (in Revolutions per Minute, RPM)

DESCRIPTION:

Convert a line sequence file from a rotating (or cyclic moving in some other way) object containing trig information to a new line sequence describing a "medium" rotation cycle.

The object may vary rotation speed.

EXAMPLE:

PERIODIZE2 LOC=/b0,NAME=acc,LINES=1000,LOWSPEED=2000

Result on /b0/PERIOD.LIN, 1000 lines in file, speed > 200 RPM

COMMAND: PRINT_FILE & PRINT_FILE_QP

PARAMETERS: NAME

Name of file to be printed.

LOC (optional, default = .)

Name of directory where file is located.

DESCRIPTION:

Send file to current spooler device.
The file has to be a text file.

EXAMPLE:

PRINT_FILE NAME=TEST.MAC, LOC=..

PRINT_FILE_QP

COMMAND: PRINT_RESTAB

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Send a copy of result table to current spooler device.

Usable in macros.

EXAMPLE: PRINT_RESTAB IRCHAN=1

COMMAND: RADIANCE_CONTROL

PARAMETERS: IRCHAN

IR channel number (1 or 2).

EPS

Emissivity value to use during radiance calculation.

If this parameter is missing, INHERIT is assumed.

WL1

Low wavelength limit of the spectrum to be used, in micrometers. If this parameter is missing 0 is assumed.

WL2

High wavelength limit of the spectrum to be used, in micrometers. If this parameter is missing INFINITY is assumed.

DESCRIPTION:

A radiance control panel is started. The values given to the command are written into the input fields.

EXAMPLE: RADIANCE_CONTROL IRCHAN=1

SEE ALSO: START_RADIANCE

COMMAND: RAMB_EQUALIZE_CONTROL

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Start reflected ambient equalize filter control panel.

EXAMPLE: RAMB_EQUALIZE_CONTROL IRCHAN=1

SEE ALSO: EM_EQUALIZE_CONTROL
BOTH_EQUALIZE_CONTROL

COMPLETE_SEQ

COMMAND: RECALL_ANALYSIS & RECALL_ANALYSIS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of macro file. If file extension (.MAC) is missing it will be added to file name.

LOC (optional, default = .)

Name of directory where macro file is located.

DESCRIPTION:

The default IR channel is set and the commands stored in the macro file are executed.

EXAMPLE:

RECALL_ANALYSIS IRCHAN=1, NAME=ANA1, LOC=STATES

RECALL_ANALYSIS_QP IRCHAN=2

SEE ALSO: STORE_ANALYSIS

COMMAND: RECALL_COMMENT & RECALL_COMMENT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of file containing an image comment.

LOC

Name of directory where comment file is located.

DESCRIPTION:

Current image source is ordered to use the new comment for all images until change of image source.

EXAMPLE: RECALL_COMMENT IRCHAN=1, NAME=TEST

RECALL_COMMENT_QP IRCHAN=1

SEE ALSO: STORE_COMMENT

COMMAND: RECALL_IMAGE & RECALL_IMAGE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of image file. Wildcards ('*' and '?') are allowed.

LOC (optional, default = .)

Name of directory where image file is located.

DESCRIPTION:

Switch to image source "OS9 source".

EXAMPLE:

RECALL_IMAGE IRCHAN=1, NAME=TEST, LOC=.

RECALL_IMAGE IRCHAN=1, NAME=*.IMG, LOC=IMAGES

SEE ALSO: STORE_IMAGE

COMMAND: RECALL_OBJPARS & RECALL_OBJPARS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of file with object parameters.

LOC (optional, default = .)

Name of directory where object parameter file is located.

OPNAME (optional, default = OPSC)

Name of object parameter set (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

Recall object parameters from file and send them to the current image source (OPSC) or to the analysis (OP01 - OP09).

EXAMPLE:

RECALL_OBJPARS IRCHAN=1, NAME=OB_SET,

RECALL_OBJPARS_QP IRCHAN=2, OPNAME=OPSP07

SEE ALSO: STORE_OBJPARS

COMMAND: RECALL_PLOT & RECALL_PLOT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Plot window number (1 - 10).

NAME

Name of file with plot data.

LOC (optional, default = .)

Name of directory where plot file is located.

DESCRIPTION:

Recall plot data from external file and reinitiate plot curves.

EXAMPLE:

RECALL_PLOT IRCHAN=1, NUM=1, NAME=PLT1.PLT, LOC=.

RECALL_PLOT_QP IRCHAN=2

SEE ALSO: STORE_PLOT

COMMAND: RECALL_SEQ & RECALL_SEQ_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of image sequence.

LOC (optional, default = .)

Name of directory where image sequence is located.

DESCRIPTION:

Switch to image source OS9 sequence.

EXAMPLE:

RECALL_SEQ IRCHAN=1, NAME=TEST, LOC=SEQUENCES

RECALL_SEQ_QPIRCHAN=2

SEE ALSO: STORE_SEQUENCE

COMMAND: REDUCE_SEQ_FILE & REDUCE_SEQ_FILE_QP

PARAMETERS: NAME

Name of file to delete images from.

LOC (optional, default = .)

Directory name where the sequence file is located.

BEGIN

Start index of image sequence to delete. (1 .. 99999).

END

End index of image sequence to delete. (1 .. 99999).

DESCRIPTION:

Deletes images from a sequence of images from a .SEQ file. Remaining images will form a new sequence and images after the deleted ones will get new numbers.

EXAMPLE:

```
REDUCE_SEQ_FILE NAME=*.MAC, LOC=MACROS, CONFIRM=ALL
                REDUCE_SEQ_FILE_QP  NAME=FOO,
                CONFIRM=NONE
```

COMMAND: REMOVE_ANALYSIS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Remove analysis and all analysis related functions.

EXAMPLE: REMOVE_ANALYSIS IRCHAN=2

SEE ALSO: START_ANALYSIS

COMMAND: REMOVE_SHOW_TEXT

PARAMETERS: None.

DESCRIPTION:

Remove latest show text window.

EXAMPLE: REMOVE_SHOW_TEXT

SEE ALSO: SHOW_TEXT

COMMAND: RENAME_FILE & RENAME_FILE_QP

PARAMETERS: NAME

Name of file to be renamed.

LOC (optional, default = .)

Name of directory where file is located.

NEW_NAME

New name of file.

DESCRIPTION:

Renames a file. Wildcards are not allowed.

EXAMPLE:

RENAME_FILE NAME=OLD.TXT, NEW_NAME=NEW.TXT, LOC=.

RENAME_FILE_QP

SEE ALSO: MOVE_FILE

COMMAND: RESET_BASE_TIME

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source is ordered to use the original image reference time for each image until change of image source.

Relevant only for disk image source.

EXAMPLE: RESET_BASE_TIME IRCHAN=1

SEE ALSO: KEEP_BASE_TIME SET_BASE_TIME

COMMAND: RESET_COMMENT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Current image source is ordered to use the original image comment for each image until change of image source. Relevant only for disk image source.

EXAMPLE: RESET_COMMENT IRCHAN=1

SEE ALSO: KEEP_COMMENT EDIT_COMMENT

COMMAND: RESET_LEVEL_SPAN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION: Current image source is ordered to use the original level and span values for all images until change of image source.

EXAMPLE: RESET_LEVEL_SPAN IRCHAN=2

SEE ALSO: SET_LEVEL_SPAN SET_CURRENT_LEVEL_SPAN

SET_ADJ_PERCENT ADJUST_LEVEL_SPAN

COMMAND: RESET_OFFSET

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION: Current image source is ordered to use the original offset correction for all images until change of image source.

EXAMPLE: RESET_OFFSET IRCHAN=1

SEE ALSO: SET_OFFSET EDIT_OFFSET KEEP_OFFSET

COMMAND: RESET_OBJPARS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION: The current image source will distribute the default values for scale object parameters.

EXAMPLE: RESET_OBJPARS IRCHAN=1

SEE ALSO: SET_CURRENT_OBJPARS SET_OBJPARS

COMMAND: RESIZE_IRWINDOW

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SIZE

Scaling factor for IR image. Recognized values are 2 for size 2:1 or 1 for size 1:1.

DESCRIPTION: The IR window adjusts to specified display size.

EXAMPLE: RESIZE_IRWINDOW IRCHAN=2, SIZE=1

RESIZE_IRWINDOW IRCHAN=1, SIZE=2

COMMAND: **RESTORE & RESTORE_QP**

PARAMETERS: LOC

Subtree to restore.

DEVICE

Device to read backup from - /mt0 for tape, /d0 for floppy

AFORMAT

Archive format: TAR or MIW (Microware fsave format).

PATTERN

Restore pattern. This gives a select key for files to restore (tar format only). Here it is possible to select directory and file names that exists on the backup tape. Observe that names are case sensitive. More than one name can be given on the line. Delimit names with a space. If a directory name is given, all files in the directory that exists on the tape will be restored.

DESCRIPTION:

Creates a control panel from which the restoring can be performed.

EXAMPLE:

RESTORE LOC=/H0, DEVICE=/MT0, AFORMAT=MIW

RESTORE DEVICE=/MT0, AFORMAT=TAR, PATTERN="IMAGES TEST.IMG"

RESTORE_QP

SEE ALSO: BACKUP RESTORE_QP

COMMAND: **RUN_CMD & RUN_CMD_QP**

PARAMETERS: CMD

os9 command/parameters to be executed by os9 shell

CMD2

continued command if there is not enough room in CMD (parameters has a maximum length of 40).

WAIT (optional, default = TRUE)

Run command in background, or let command interpreter wait until os9 command is ready.

DESCRIPTION: An OS-9 command is executed by an os9 shell.

CMD and CMD2 are concatenated before execution. Ev. heading/trailing blanks are removed before concatenation.

EXAMPLE:

RUN_CMD CMD="bitmap myown.bit 30x30",WAIT=FALSE

SEE ALSO: RUN_MACRO_QP

COMMAND: RUN_MACRO & RUN_MACRO_QP

PARAMETERS: NAME

Name of macro file.

LOC (optional, default = .)

Name of directory where the macro file is located.

IGNERR (optional, default = FALSE)

Stop on error. If TRUE then abort macro process on error.

DESCRIPTION:

A macro process is started and receives a priority channel to the command interpreter. Commands are read from the macro file and executed. The process is terminated at end of file. A macro is able to start a new macro and will wait for termination of the new macro before continuing. There is currently a limit of 10 macro levels.

EXAMPLE:

RUN_MACRO NAME=TEST, LOC=MACROS, IGNERR=TRUE

RUN_MACRO_QP

SEE ALSO: RUN_CMD

COMMAND: SAMPLE_SOUND

PARAMETERS: NAME

Name of data file.

LOC (optional, default = .)

Name of directory where the data file is located.

FREQUENCY (optional, default = 8000)

Sample frequency for the sound (in Hz).

REPEAT (optional, default = 1) Number of times to repeat the sound.

DESCRIPTION:

Makes the loudspeaker sound using data in a file.

EXAMPLE:

```
SAMPLE_SOUND NAME=INFO.DAT, LOC=SOUNDS, FREQUENCY=10000, REPEAT=2
```

SEE ALSO: CONTROL_SOUND MAKE_SOUND

COMMAND: SCALE_PLOT & SCALE_PLOT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Index for plot window.

FIX (optional, default = FALSE)

Flag for fix scale. If TRUE then fix scale else auto scaling.

MIN (option, default = 0)

Scale lower limit (ignored if FIX=FALSE).

MAX (option, default = 0)

Scale upper limit (ignored if FIX=FALSE).

TSCALE (optional, default = FALSE)

Flag for horizontal time scale. If TRUE then time scale else image scale.

DESCRIPTION:

Rescale the plot window.

EXAMPLE:

SCALE_PLOT IRCHAN=1, NUM=3, FIX=TRUE, MIN=20, MAX=40

SCALE_PLOT_QP IRCHAN=2, NUM=2

SEE_ALSO:

ADD_PLOT RECALL_PLOT STORE_PLOT DEL_PLOT

COMMAND: SCANNER_CONTENT

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Create a window which shows the calibration data of the scanner.

EXAMPLE: SCANNER_CONTENT IRCHAN=2

COMMAND: SCANNER_IMAGE_ROTATE

PARAMETERS: IRCHAN

IR channel number (1 or 2). Default = 1.

ROTATE

ON, OFF, TOGGLE

DESCRIPTION:

Sends instructions to scanner to rotate the image. For example when using a FOV40 lens on a scanner not calibrated for it.

EXAMPLE:

SET_SCANNER IRCHAN=1, ROTATE=ON Rotate image from "normal" SET_SCANNER IRCHAN=2, ROTATE=TOGGLE Rotate image 180 current.

COMMAND: SCANNER_LOAD & SCANNER_LOAD_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

PROG (optional)

Name of scanner program file.

CALIB1 (optional)

Name of calibration file, part 1.

CALIB2 (optional)

Name of calibration file, part 2.

DESCRIPTION:

Reprogram and/or recalibrate the scanner.

EXAMPLE:

SCANNER_LOAD IRCHAN=1, PROG=SC_PROG, CALIB1=CAL01

SCANNER_LOAD_QP IRCHAN=2

COMMAND: SCREEN_COPY

PARAMETERS: None.

DESCRIPTION:

Make a screen copy of any window and display copy in separate window. The window must be in front of other windows, else the obscuring window will be partly included in result. Observe that the copy is only a snapshot of the source window, functionality (buttons menus) are not copied.

When executing command a beep will be heard and mouse cursor is transformed to a '+'. Position '+' inside the window to copy and click left mouse button.

EXAMPLE: SCREEN_COPY

COMMAND: SCREEN_DUMP & SCREEN_DUMP_QP

PARAMETERS: LOC (optional, default = .)

Name of directory where dump file is to be located.

IFORMAT (optional, default = GIF)

PC image file format (GIF, PCX or TIFF).

NAME

Screen dump file name. Extension is determined by IFORMAT.

OVWR (optional, default = FALSE)

Overwrite existing file if TRUE.

WIN (optional, default = USER)

Window type (1, 2 or USER). USER means that the user interactively selects a window to dump. 1 or 2 means that the corresponding IR image (if active) is selected.

DESCRIPTION:

Make a screen dump of selected screen window and put the result into an external file on the selected graphical format. When executing command, and WIN == USER, a beep will be heard and mouse cursor is transformed to a '+'. Position '+' inside the window to copy and click left mouse button. If copying IR window content, make sure that irwindow is not "exposed" while window is copied. To ensure this put irwindow on top of question panel before clicking OK.

EXAMPLE:

```
SCREEN_DUMP LOC=., NAME=TEST,
IFORMAT=GIF, OVWR=TRUE, WIN=USER
SCREEN_DUMP_QPIRCHAN=1
```

COMMAND: SET_ADJ_PERCENT & SET_ADJ_PERCENT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

PERCENT (optional, default = AUTO_LS_PERCENT)

Percentage of temperature range. Ranges between the constants DLH_AUTO_MIN_PERCENT and DLH_AUTO_MAX_PERCENT.

DESCRIPTION:

Set percentage of the image temperature range. This percentage is used at automatic adjust of level and span. The new percentage is stored in the environment variable DLH_AUTO_DFT_PERCENT. ADJUST_LEVEL_SPAN is executed with the new percentage value.

EXAMPLE: SET_ADJ_PERCENT IRCHAN=1, PERCENT=90

SET_ADJ_PERCENT_QP IRCHAN=2

SEE ALSO: SET_LEVEL_SPAN SET_CURRENT_LEVEL_SPAN

RESET_LEVEL_SPAN ADJUST_LEVEL_SPAN

COMMAND: SET_BACKGROUND

PARAMETERS: TYPE (optional, default = DEF)

Background type:

DEF = Default background (only back & white).
SOLID = One colour background.
BMAP = Two coloured bitmap background.

BG (optional, default = BLACK)

Background colour (will not affect TYPE=DEF).
Valid colours are: BLACK, WHITE and COLOUR1 - COLOUR9.

FG (optional, default = WHITE)

Foreground colour of bitmap (will only affect TYPE=BMAP)

Valid colours are: BLACK, WHITE and COLOUR1 - COLOUR9.

BITMAP (optional)

Bitmap file name (only for TYPE=BMAP)

BITMAP_LOC (optional, default = .)

The location of bitmap file (only for TYPE=BMAP)

DESCRIPTION:

The command will change the colour of the screen background.

EXAMPLE:

SET_BACKGROUND TYPE=DEF

SET_BACKGROUND TYPE=SOLID, BG=COLOUR5

SET_BACKGROUND TYPE=BMAP, FG=WHITE, BITMAP=stripes, BITMAP_LOC=bmaps

COMMAND: SET_BASE_TIME

PARAMETERS: IRCHAN

IR channel number (1 or 2).

TIME (optional, default = CURRENT)

Image base time. Valid values are:

CURRENT = Use current image time.

HH:MM:SS = User defined time.

FRAC (optional, default = 0)

Image base time, fractions of a second (0 - 999).

DESCRIPTION:

Current image source distributes the new image base time along with the images. The new value affects the system at next change of image.

EXAMPLE: SET_BASE_TIME IRCHAN=1, TIME=15:10:30, FRAC=237

SET_BASE_TIME IRCHAN=1, TIME=CURRENT

SEE ALSO: RESET_BASE_TIME KEEP_BASE_TIME TIMER

COMMAND: SET_CURRENT_LEVEL_SPAN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Retrieves the level and span values from the current image source and makes them "current". These values are now distributed along with the images. The new values affects the system at next change of image.

EXAMPLE: SET_CURRENT_LEVEL_SPAN IRCHAN=1

SEE ALSO: SET_LEVEL_SPAN SET_ADJ_PERCENT

RESET_LEVEL_SPAN ADJUST_LEVEL_SPAN

COMMAND: SET_CURRENT_OBJPARS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

Retrieves the object parameters from the current image source and makes them "current". These values are now distributed along with the images. The new values affects the system at next change of image.

EXAMPLE: SET_CURRENT_OBJPARS IRCHAN=2

SEE ALSO: RESET_OBJPARS

COMMAND: SET_DATE_TIME & SET_DATE_TIME_QP

PARAMETERS: DATE

Date formatted as specified by DFORMAT.

TIME

Time formatted as HH:MM:SS.

DFORMAT

Determines format of DATE. Must contain YY for year, MM, mmm or month for month and DD for day. e.g. YY-MM-DD, YY mmm DD, DD/month -YY

DESCRIPTION:

Sets system time. Parameter values of DATE and TIME are ignored in the dialog panel command and replaced by current system time.

EXAMPLE:

SET_DATE_TIME DATE=94-02-11, DFORMAT=YY-MM-DD, TIME=15:20:00

SET_DATE_TIME_QP

COMMAND: **SET_DEF_IRCHAN**

PARAMETERS: IRCHAN

IR channel number (0, 1 or 2).

DESCRIPTION:

Sets default IR-channel. When the default IR-channel is set (1 or 2), all other commands containing the parameter "IRCHAN" can be called without this parameter. This can be used to make macros independent of IR-channel. When the "IRCHAN" parameter is set to 0 (zero, only valid for this command), the default IR-channel is reset.

EXAMPLE: SET_DEF_IRCHAN IRCHAN=1

COMMAND: SET_LEVEL_SPAN & SET_LEVEL_SPAN_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LEVEL

New level.

SPAN

New span.

DESCRIPTION:

Current image source distributes the new level and span along with the images. The new values affects the system at next change of image.

EXAMPLE:

SET_LEVEL_SPAN IRCHAN=1, LEVEL=2453, SPAN=658

SET_LEVEL_SPAN_QP IRCHAN=2

SEE ALSO: SET_CURRENT_LEVEL_SPAN SET_ADJ_PERCENT

RESET_LEVEL_SPAN ADJUST_LEVEL_SPAN

COMMAND: SET_LINESCANPOS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

LNUM

line number for line to use in linescanner mode.

0 is top line, highest number (bottom line) depends of scanner type.

DESCRIPTION:

Tells irwindow and scanner which scanline to use when entering linescan mode. This is only valid together with LINY option.

EXAMPLE:

SET_LINESCANPOS IRCHAN=1, LNUM=20

SET_LINESCANPOS IRCHAN=2, LNUM=105

SEE ALSO: SET_SCANNER

COMMAND: SET_LOCATION & SET_LOCATION_QP

PARAMETERS: LOC

Name of directory which is to be "current directory".

DESCRIPTION:

Changes "current directory". Current directory is displayed on the top line.

EXAMPLE: SET_LOCATION LOC=..

SET_LOCATION_QP LOC=/H0

COMMAND: SET_OBJPARS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

EPS

Emissivity of object.

TAO_EST

Estimated transmittance. If 0 then do not use this value.

TATM

Atmospheric temperature.

TAMB

Ambient temperature.

DOBJ

Object distance in meters.

RELHUM

Relative humidity in percent.

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

DESCRIPTION:

Changes object parameters. Specify only parameters which need to be modified. Observe that TATM and TAMB uses kelvin. If current presentation unit is preferred, use command EDIT_OBJPARS instead.

EXAMPLE:

SET_OBJPARS IRCHAN=1, EPS=0.98, TATM=25, DOBJ=20

SET_OBJPARS IRCHAN=2, RELHUM=70, OPNAME=OPAR03

SEE ALSO: RESET_OBJPARS

COMMAND: **SET_OFFSET & SET_OFFSET_QP**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

OFFSET

New offset correction.

DESCRIPTION:

Current image source distributes the new offset correction along with the images. The new value affects the system at next change of image.

EXAMPLE: SET_OFFSET IRCHAN=1, OFFSET=200

SET_OFFSET_QP IRCHAN=2

SEE ALSO: RESET_OFFSET EDIT_OFFSET KEEP_OFFSET

COMMAND: SET_PALETTE & SET_PALETTE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of palette file to use.

LOC (optional, default = .)

Name of directory where palette file is located.

DESCRIPTION:

Reads palette file into memory and activates the palette.

EXAMPLE:

SET_PALETTE IRCHAN=1, NAME=COLIRON, LOC=/H0/ASYS/LIB

SET_PALETTE_QP IRCHAN=1

COMMAND: SET_PORT & SET_PORT_QP

PARAMETERS: BAUD (optional, default = 9600)

Baud rate of serial port (300, 1200, 2400, 4800, 9600, 19200).

PARITY (optional, default = NONE)

Parity of serial port (NONE, EVEN, ODD).

BITS (optional, default = 8)

Number of data bits (7 or 8).

NAME (optional)

Name of spooler device.

DESCRIPTION:

Changes the serial port parameters. Instead of spooler device an ordinary file name may be used to redirect all spooler output to a disk file in which case the three first parameters are not used.

EXAMPLE:

SET_PORT BAUD=9600, PARITY=EVEN, BITS=7, NAME=/t1

SET_PORT_QP

SEE ALSO: PRINT_FILE

COMMAND: SET_SCALE_LIMITS & SET_SCALE_LIMITS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SLIMUP

Scale upper limit in current unit of presentation.

SLIMLO

Scale lower limit in current unit of presentation.

DESCRIPTION:

Translates the scale limits to level and span values. The current image source will distribute the new level and span along with the images. The new values affects the system at next change of image.

EXAMPLE:

SET_SCALE_LIMITS IRCHAN=1, SLIMLO=0, SLIMUP=10

SET_SCALE_LIMITS_QP IRCHAN=2

COMMAND: SET_SCANNER

PARAMETERS: IRCHAN

IR channel number (1 or 2).

MOTOR

ON, OFF and if Stirling Scanner STBY

FRAME_RATE

HIGH, LOW

CASSETTE

Filter cassette number (1-4)

FILTER

Filter number in cassette (1-6)

TEMP_RANGE

Temperature range (1-4)

FILTERNAME

An alternate way to select filter by name.

The scanner will be searched for a filter with requested name and, if found, the proper cassette number and filter number will be set.

DESCRIPTION:

Changes scanner setup. Specify only parameters which need to be modified.

EXAMPLE:

```
SET_SCANNER IRCHAN=1, MOTOR=ON, FRAME_RATE=HIGH, FILTERNAME=ATM

SET_OBJPARS IRCHAN=2, MOTOR=STBY, TEMP_RANGE=4, FILTER=2
```

SEE ALSO: SCANNER_CONTROL_WINDOW

COMMAND: SET_WINDOWPOS

PARAMETERS: POS

Syntax X:Y

X is pixel column coordinate (from left to right) varies from 0 to 640

Y is pixel row coordinate (from top to bottom) varies from 0 to 480

The position refers to the top left corner of a window.

DESCRIPTION:

The command can be used in macros to control where windows are placed, especially in the macro INIT.MAC.

It interferes with window manager's (agwm) normal placement algorithm and gives next position to use.

Agwm will place next created window at this location if possible. The placement algorithm will then continue from the new position.

Windows without a title line, such as the top line and the dialog panels, can not be positioned.

The window placement takes place at the same moment as the window appears on the screen. This means one has to make sure that the window has had time to show up before the next SET_WINDOWPOS command can be issued. A $WAIT macro statement after the window creating command is the appropriate way to handle this situation.

The IR windows will be placed on certain X-coordinates only, due to hardware restrictions.

EXAMPLE:

```
SET_WINDOWPOS POS=0:40
CREATE_IRWINDOW IRCHAN=1, PRES=TEMP, TUNIT=CELSIUS
$WAIT
```

COMMAND: SHOW_IMAGE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

STEP

Step length in sequence (positive or negative integer).

DESCRIPTION:

Orders current image source to show next image from the current image sequence. Next image is determined by STEP (only relevant for disc image sources).

EXAMPLE: SHOW_IMAGE IRCHAN=1, STEP=3

SHOW_IMAGE IRCHAN=2, STEP=-1

COMMAND: SHOW_OTHERCHAN & SHOW_OTHERCHAN_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

FILTERNAME (optional)

Name of filter to use.

FILTERPAR (optional)

Filter parameter, if any necessary.

DESCRIPTION:

If no FILTERNAME is specified an image source is started which copies images from the other IR channel in real time. If

FILTERNAME is specified then the images will pass through a software filter. The image frequency now depends on the complexity of the filter.

EXAMPLE:

SHOW_OTHERCHAN IRCHAN=1, FILTERNAME=MIRROR, FILTERPAR=X

SHOW_OTHERCHAN_QP IRCHAN=2

SEE ALSO: the help text NAMED_FILTER, for information about available filters and their parameters.

COMMAND: SHOW_TEXT

PARAMETERS: NAME

Name of text file to be displayed.

LOC (optional, default = .)

Name of directory where text file is located.

BITMAP

Name of bitmap file.

DESCRIPTION:

Displays a text file and, if specified, a bitmap.

EXAMPLE:

SHOW_TEXT NAME=LABEL.TXT, BITMAP=LABEL.BIT, LOC=/H0/USR/ERIKA

SEE ALSO: REMOVE_SHOW_TEXT COMPANY_LABEL

COMMAND: SHOW_TIME

PARAMETERS: IRCHAN

IR channel number (1 or 2).

PRES (optional, default = ABS)

Type of time presentation.

ABS = Absolute image time.

REL = Relative time to base.

OFF = No time presentation.

DESCRIPTION:

Display a time row in the result table(s).

EXAMPLE: SHOW_TIME IRCHAN=1, PRES=ABS

SEE ALSO:

SET_BASE_TIME KEEP_BASE_TIME RESET_BASE_TIME TIMER_CONTROL

COMMAND: START_ANALYSIS

PARAMETERS: IRCHAN

IR channel number (1 or 2).

RESTAB (optional, default = ON)

Radiance result window on or off.

ON = Results presentation active.

OFF = No results presentation.

EPS

Emissivity value to use during radiance calculation.

If this parameter is missing, the radiance calculation will inherit the emissivity factor of the temperature

calculations.

WL1

Low wavelength limit of the spectrum to be used, in micrometers. If this parameter is missing 0 is assumed.

Permitted values are 0 to 100.

WL2

High wavelength limit of the spectrum to be used, in micrometers. If this parameter is missing INFINITY

is assumed.

Permitted values are 0 to 100. Must exceed WL1.

DESCRIPTION:

Starts the radiance analysis and creates a radiance results table.

If the radiance analysis already is active, its parameters will be changed in accordance with the new values. Then no new result window will be created even if RESTAB is ON.

EXAMPLE: START_RADIANCE IRCHAN=1

START_RADIANCE IRCHAN=1, EPS=0.67

SEE ALSO: CREATE_RAD_RESTAB

COMMAND: START_FREERUN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

STEP

Step length (positive or negative integer).

DESCRIPTION:

The current image source starts a free-running image sequence with step length. Only relevant for disk image sources.

EXAMPLE: START_FREERUN IRCHAN=1, STEP=1

SEE ALSO: START_SEQ STOP_DISTR

COMMAND: START_LOG_QP

PARAMETERS: NAME

Name of macro file to store commands on. If extension (.MAC)is missing it will be added to the filename.

LOC (optional, default = .)

Name of directory where macro file will be or is located.

TITLE (optional, default = empty string)

Title text for macro file. Maximum 30 characters.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE overwrite any existing file.

APPEND (optional, default = FALSE)

Append to existing file. If TRUE then append macro commands to an existing macro file.

DESCRIPTION:

All commands succeeding this will be stored on file in macro command format. To stop logging of commands use: STOP_LOG.

NOTE: Some commands of interactive type (not _QP commands) should be avoided while logging commands (e.g. START_SKETCH). It is also recommended not to run any macros during logging session.

EXAMPLE:

START_LOG_QP NAME=LOG, LOC=MACROS, TITLE=Test, OVWR=TRUE

SEE ALSO: START_LOG_QP STOP_LOG RUN_MACRO

COMMAND: START_SCANNER

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SHOW (optional, default = OFF. But if the environment variable SCANNER_CONTROL exist and has the value "ON", default is ON)

ON = Scanner control panel becomes visible

OFF = Scanner control panel remains invisible

DESCRIPTION:

Switch to image source scanner.

EXAMPLE:

START_SCANNER IRCHAN=1

START_SCANNER IRCHAN=1,SHOW=ON

COMMAND: START_SEQ

PARAMETERS: IRCHAN

IR channel number (1 or 2).

STEP

Step length (positive or negative integer).

DESCRIPTION:

The current image source starts a sequential image flow with step length. (Only relevant for disk image sources).

EXAMPLE: START_SEQ IRCHAN=2, STEP=-1

SEE ALSO: START_FREERUN STOP_DISTR

COMMAND: START_SKETCH

PARAMETERS: IRCHAN

IR channel number (1 or 2).

SYMBOL (optional)

Valid values are: SPOT, LINE, BOX, AREA, CIRCLE and ELLIPSE.

DESCRIPTION:

This command starts the sketch mode in the IR-window for the specified symbol type. The analysis will be started, if not done before.

NOTE: This is an interactive command, and must not be used in macros.

EXAMPLE: START_SKETCH IRCHAN=1, SYMBOL=CIRCLE

COMMAND: START_TOOLBOX & START_TOOLBOX_QP

PARAMETERS: NAME

Name of toolbox file.

LOC (optional, default = .)

Name of directory where the macro file is located.

SHOWINF (optional, default = TRUE)

If TRUE, then tool information will be shown.

DESCRIPTION:

A toolbox process is started. It will read and interpret specified toolbox file. This file descibes the tools to be availible in the toolbox. Each tool will be associated with a button in the toolbox control panel. When pressing this button one of four types of commands can be executed:

- o An ordinary Erika command.
- o An Erika macro.
- o An OS-9 command.
- o An internal message command.

EXAMPLE:

START_TOOLBOX NAME=TEST, LOC=TOOLS, SHOWINF=FALSE

START_TOOLBOX_QP

COMMAND: STOP_DISTR

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

The current image source stops the image sequence momentarily.

(Only relevant for disk image sources).

EXAMPLE: STOP_DISTR IRCHAN=1

SEE ALSO: START_SEQ START_FREERUN

COMMAND: STOP_LOG

PARAMETERS: None.

DESCRIPTION:

Stops command logging and closes command macro file.

EXAMPLE: STOP_LOG

SEE ALSO: START_LOG_QP

COMMAND: STORE_ANALYSIS & STORE_ANALYSIS_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of macro file. If extension (.MAC) is missing it will be added to the filename.

LOC (optional, default = .)

Name of directory where macro file is located.

TITLE (optional, default = empty string)

Title text for macro file. Maximum 30 characters.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE overwrite any existing file.

APPEND (optional, default = FALSE)

Append to existing file. If TRUE then append macro commands to an existing analysis macro file.

FUNC

Analysis function to store (AREA, LINE, SPOT, ALL).

AREA	Store all related area tasks (plot excluded)
LINE	Store all related line tasks (plot excluded)
SPOT	Store all related spot tasks (plot excluded)
ALL	Store all analysis tasks.

NUM

Analysis function index, 1 - 99. Ignored if FUNC=ALL.

DESCRIPTION:

The analysis functions are stored on file in macro command format. All channel related commands are stored without specifying the IRCHAN parameter.

EXAMPLE:

STORE_ANALYSIS IRCHAN=1, NAME=SAVE, TITLE=Test, FUNC=ALL

STORE_ANALYSIS IRCHAN=1, NAME=L3, OVWR=TRUE, FUNC=LINE, NUM=3

SEE ALSO: RECALL_ANALYSIS

COMMAND: STORE_COMMENT & STORE_COMMENT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of image comment file.

LOC (optional, default = .)

Name of directory where comment file is located.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

DESCRIPTION:

The image comment of the current image source is stored on file.

EXAMPLE:

STORE_COMMENT IRCHAN=1, NAME=CM1, LOC=/DOS, OVWR=TRUE

STORE_COMMENT_QPIRCHAN=2

SEE ALSO: RECALL_COMMENT

COMMAND: STORE_HISTO & STORE_HISTO_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of histogram file. Extension (.HIS) will be added if missing in filename.

LOC (optional, default = .)

Name of directory where histogram file is located.

TITLE (optional, default = empty string)

Title text for histogram file. Maximum 30 characters.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

FUNC

Type of histogram to store (AREA or LINE).

NUM

Analysis function index, 1 - 99.

DESCRIPTION:

Store histogram data and classes on external file.

EXAMPLE:

STORE_HISTO IRCHAN=1, NAME='HIST1', OVWR='TRUE', FUNC='LINE', NUM=23

STORE_HISTO_QP IRCHAN=2

COMMAND: STORE_IMAGE & STORE_IMAGE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of image file. Extension (.IMG) will be added if missing in filename.

If name starts with "AUTO_" followed by optional string an automatic, unique name will be used (see autoname)

LOC (optional, default = .)

Name of directory where image file is located.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

DESCRIPTION:

Store current image on file.

EXAMPLE:

STORE_IMAGE IRCHAN=2, NAME=BT_01, LOC=., OVWR=TRUE

STORE_IMAGE_QPIRCHAN=2

SEE ALSO: RECALL_IMAGE

COMMAND: STORE_LINE & STORE_LINE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of line file. Extension (.LIN) will be added if missing in filename.

If name starts with "AUTO_" followed by optional string an automatic, unique name will be used (see autoname)

LOC (optional, default = .)

Name of directory where line files are located.

The location must be a burst device.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

KEEP (optional, default = ALL)

Keep lines in sequence. If ALL then keep all lines. If LAST/N then keep the latest N megabytes of line data. N must be in the set [1, 2, 4, 8, 16, 32, 64, 128].

START (optional, default = NOW)

Start condition for sequence storage, valid conditions are:

NOW	- Start immediately.	
TIME	- Start at a certain time.	(/HH:MM:SS)
KTRIG	- Start on keyboard trig.	(/A or /B)
ETRIG	- Start on external trig.	(/A, /B, /C or /D)

DELAYSTART (optional, default 0)

Start condition delay if condition is trig.
Value as time (HH:MM:)SS

STORE (optional, default = ALL)

Store condition, valid conditions are:

ALL	- Store all lines.	
INT	- Store every x line.	(/x)

UNTIL (optional, default = FOREVER)

Stop condition for storage, valid conditions are:

FOREVER	- Never stop.	
DUR	- Stop after time duration.	(HH:MM:SS)
NUM	- Stop after storing N lines.	(/N)
TRIGS	- Stop after N line trigs.	(/N)
KTRIG	- Stop on keyboard trig.	(/A or /B)
ETRIG	- Stop on external	

DELAYSTOP (optional, default 0)

Until condition delay if condition is a trig.
Value as time (HH:MM:)SS

WAIT (optional, default = FALSE)

Wait for store completion.

Normally command returns when a store process is started in the background. If WAIT is TRUE, command will wait for store process to complete before returning.
(useful in macros)

DESCRIPTION:

Store line sequence on file.

EXAMPLE:

```
STORE_LINE IRCHAN=1, LOC=/B0, NAME=T1, START=TIME/12:00:00,
                UNTIL=DUR/2:00

STORE_LINE IRCHAN=1, LOC=/BRAM, NAME=T2, STORE=ALL,
                UNTIL=TRIGS/100, KEEP=LAST/1

STORE_LINE IRCHAN=1, LOC=/B0, NAME=T3, STORE=IN
                UNTIL=KTRIG/B, KEEP=ALL
```

SEE ALSO: RECALL_SEQ

COMMAND: **STORE_OBJPARS & STORE_OBJPARS_QP**

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of object parameter file. Extension (.OPR) will be added if missing in filename.

LOC (optional, default = .)

Name of directory where file is located.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

OPNAME (optional, default = OPSC)

Object parameter set. (OPyyxx or OPSC; yy = SP, AR or LI, xx = 01..99)

TITLE (optional, default = empty string)

Title text for file. Maximum 30 characters.

DESCRIPTION:

Store object parameter set on file.

EXAMPLE:

STORE_OBJPARS IRCHAN=1, NAME=OB2, OVWR=TRUE, TITLE="Test set"

STORE_OBJPARS_QP IRCHAN=2, OPNAME=OPLI05

SEE ALSO: RECALL_OBJPARS

COMMAND: STORE_PLOT & STORE_PLOT_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NUM

Plot window number.

NAME

Name of plot data file. Extension (.PLT) will be added if missing in filename.

LOC (optional, default = .)

Name of directory where file is located.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

TITLE (optional, default = empty string)

Title text for file. Maximum 30 characters.

DESCRIPTION:

Store plot data on file. Plot data is retrieved by the RECALL_PLOT command.

EXAMPLE:

STORE_PLOT IRCHAN=1, NUM=2, NAME=PL1, OVWR=TRUE

STORE_PLOT_QP IRCHAN=2

SEE ALSO: RECALL_PLOT

COMMAND: STORE_PROFILE & STORE_PROFILE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of profile file. Extension (.PRF) will be added if missing in filename.

LOC (optional, default = .)

Name of directory where profile file is located.

TITLE (optional, default = empty string)

Title text for profile file. Maximum 30 characters.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

NUM

Line function index, 1 - 99.

DESCRIPTION:

Store profile coordinates and values on external file.

EXAMPLE:

STORE_PROFILE IRCHAN=1, NAME=PROF1, OVWR=TRUE, NUM=23

STORE_PROFILE_QPIRCHAN=2

COMMAND: STORE_SEQUENCE & STORE_SEQUENCE_QP

PARAMETERS: IRCHAN

IR channel number (1 or 2).

NAME

Name of image file. Extension (.IMG or .SEQ) will be added if missing in filename.

If name starts with "AUTO_" followed by optional string an automatic, unique name will be used (see autoname)

LOC (optional, default = .)

Name of directory where image files are located.

OVWR (optional, default = FALSE)

Overwrite existing file. If TRUE then overwrite any existing file.

APPEND (optional, default = FALSE)

Append image files to an already existing sequence if TRUE.

SEQ (optional, default = FALSE)

Image sequence in one file. If TRUE then put all images in one file. File extension will be .SEQ.

KEEP (optional, default = ALL)

Keep images in sequence. If ALL then keep all images If LAST/N then keep the latest N images.

START (optional, default = NOW)

Start condition for sequence storage, valid conditions are:

NOW - Start immediately.

TIME - Start at a certain time. (/HH:MM:SS)

KTRIG - Start on keyboard trig. (/A or /B)

ETRIG - Start on external trig. (/A, /B, /C or /D)

ATRIG - Start on alarm trig. (/A, /B, /C or /D)

DELAYSTART (optional, default 0)

Start condition delay if condition is trig. Value as time (HH:MM:)SS

STORE (optional, default = ACC)

Store condition, valid conditions are:

ALL - Store all images.

ACC - Store accepted images.

CYCLE - Store at time interval. (/HH:MM:SS)

KTRIG - Store on keyboard trig. (/A or /B)

ETRIG - Store on external trig. (/A, /B, /C or /D)

ATRIG - Store on alarm trig. (/A, /B, /C or /D)

INT - Store every x image. (/x) (only for burst)

UNTIL (optional, default = FOREVER)

Stop condition for storage, valid conditions are:

FOREVER - Never stop.

END - Stop at end of sequence.

DUR - Stop after time duration. (/HH:MM:SS)

NUM - Stop after storing N images. (/N)

KTRIG - Stop on keyboard trig. (/A or /B)

ETRIG - Stop on external trig. (/A, /B, /C or /D)

ATRIG - Stop on alarm trig. (/A, /B, /C or /D)

DELAYSTOP (optional, default 0)

Until condition delay if condition is a trig. Value as time (HH:MM:)SS

WAIT (optional, default = FALSE)

Wait for store completion.

Normally command returns when a store process is started in the background. If WAIT is TRUE, command will wait for store process to complete before returning. (useful in macros)

DESCRIPTION:

Store image sequence on file(s). Files are numbered in sequence.

EXAMPLE:

```
STORE_SEQUENCE IRCHAN=1, NAME=T1, START=TIME/12:00:00, UNTIL=DUR/2:00

STORE_SEQUENCE IRCHAN=1, NAME=T2, STORE=ACC, UNTIL=NUM/10,
                    KEEP=ALL

STORE_SEQUENCE IRCHAN=1, NAME=T3, STORE=KTRIG/A, UNTIL=KTRIG/B,
                    STOPDELAY=01:10,KEEP=LAST/5, WAIT=TRUE

STORE_SEQUENCE_QP IRCHAN=2
```

SEE ALSO: RECALL_SEQ

COMMAND: **SWITCH_MODE**

PARAMETERS: SHOW (optional)

Show dialog panels if SHOW=ON. If SHOW=OFF then no dialog panels will be displayed.

PUT_DEF (optional)

Save dialog panel values if ON. Parameter values entered into dialog panels are saved if PUT_DEF=ON. No save if PUT_DEF=OFF.

MACRO (optional)

Commands are saved in a command macro file if MACRO=ON.

(Not yet implemented).

EXEC (optional)

Execute commands produced by dialog panels if EXEC=ON.

DESCRIPTION:

Modifies global flags in the command interpreter to affect the function in dialog panels. (Useful in macros).

EXAMPLE: SWITCH_MODE SHOW=ON, PUT_DEF=OFF, MACRO=OFF, EXEC=ON

COMMAND: TERMINATE_IRCHAN

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

Terminate specified IR channel. All functions connected to the IR channel are also terminated.

EXAMPLE: TERMINATE_IRCHAN IRCHAN=2

SEE ALSO: CREATE_IRWINDOW

COMMAND: UNFREEZE

PARAMETERS: IRCHAN

IR channel number (1 or 2).

DESCRIPTION:

The current image source unfreezes the image flow.

EXAMPLE: UNFREEZE IRCHAN=1

SEE ALSO: UNFREEZE FREEZE

COMMAND: WAIT

PARAMETERS: UNTIL

Wait condition, valid conditions are:

DUR	- Stop after time duration.	(/HH:MM:SS)
TIME	- Wait until a certain time.	(/HH:MM:SS)
KTRIG	- Wait until keyboard trig.	(/A or /B)
ETRIG	- Wait until external trig.	(/A, /B, /C or /D)
ATRIG	- Wait until alarm trig.	(/A, /B, /C or /D)

DESCRIPTION:

Wait until condition is true.

EXAMPLE:

WAIT UNTIL=DUR/3:45 (wait 3 minutes & 45 seconds)

WAIT UNTIL=TIME/12 (wait until noon)

WAIT UNTIL=ETRIG/C (wait until external trig C)

2. ERIKA Macro Commands

Contents

2. ERIKA MACRO COMMANDS

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ERIKA MACRO COMMANDS

This is a brief description of all macro commands which are accepted by the ERIKA macro reader. Macro commands are prefixed with the character '$'.

The recognized **macro control commands** are:

$LOOP	-	begins a loop
$ENDLOOP	-	ends a loop
$IF_OK	-	Do following commands if last command executed OK
$IF_NOK	-	Do following commands if last command returned error
$ELSE	-	Do else
$ENDIF	-	Ends conditional execution
$WAIT	-	macro wait

The following macro commands also exist, but are only synonyms to some of the ones above for compatibility reasons. Do not use them in new macros:

$OK	-	Same as $IF_OK
$NOK	-	Same as $IF_NOK
$<	-	Same as $<

Loop execution:

A loop begins with: $LOOP [<times>]

<times> should be a positive integer number.

<times> may be omitted, in this case the loop will continue forever or until an error is found (if ignore errors or error handling defined it will continue anyway). "Break macro" from the top line menu may be used to break an "eternal" macro loop.

A loop is ended with $ENDLOOP

Commands between $LOOP and $ENDLOOP are executed in a loop the given number of times. Loops may be nested (max. 10 levels)

Loop example:

```
CREATE_IRWINDOW IRCHAN=1

START_SCANNER IRCHAN=1

# Store 3 images

$LOOP 3

# Store image on name TESTYYMMDD_XX.IMG
STORE_IMAGE IRCHAN=1,NAME=AUTO_TEST

$ENDLOOP
```

Conditional execution:

A macro is normally terminated when an ERIKA command returns an error. If, however, the next executable line in the macro contains "$IF_OK" or "$IF_NOK", conditional execution will take place instead of termination.

Commands following $IF_OK will only be executed if the command before $IF_OK was executed successfully.

Conditional execution is terminated with $ELSE or $ENDIF.

Commands following $ELSE are executed only if the original condition was not fulfilled.

The "ELSE" condition should be ended with $ENDIF.

Conditional execution may not be nested.

Conditional execution example:

Please note that # is a comment sign, i.e. everything after this character until the end of the line will be ignored by the macro reader.

```
# Macro which creates irwindow 1 and one spotmeter

CREATE_IRWINDOW IRCHAN=1

$IF_NOK

# Assume that irwindow 1 already exists

# so prevent the macro from termination

$ENDIF

ADD_SPOT IRCHAN=1
```

Macro WAIT:

Syntax for macro wait command:

$WAIT [<seconds>]

<seconds> is the number of seconds to wait. If omitted 5 seconds will be used. Please observe that there is an ERIKA command WAIT which should be used instead as it has a much more flexible wait control (wait for trigs etc.) See WAIT.

Below you can find some examples of how to use macros.

A typical init macro

```
#$Init macro
#*.MAC Version 1
#
SET_WINDOWPOS POS=440:40
START_TOOLBOX LOC=/H0/ASYS/TOOLBOX,
NAME=IR.TOB
$WAIT 10
#
CONTROL_SOUND VOLUME=50
#
# Start IR window 1 at position 0:40, start the scanner,
# do not show any scanner control panel
# Use the WAIT command
#
SET_WINDOWPOS POS=0:40
CREATE_IRWINDOW IRCHAN=1, PRES=TEMP,
TUNIT=CELSIUS
START_SCANNER IRCHAN=1, SHOW=OFF
WAIT UNTIL=DUR/10
ADJUST_LEVEL_SPAN IRCHAN=1
#
# Start a clock in the bottom right corner of the screen
#
SET_WINDOWPOS POS=573:440
CREATE_CLOCK_WINDOW TYPE=DIGITAL
```

A command log macro

An easy way to create macros is to use the command log. Switch that facility on, and do exactly what you want the macro to do. Switch the command log off and edit the log file slightly. Now you have created your macro file. Here is a log which copies images from some directories on to a DOS diskette:

```
#$Command log

#*.MAC Version 1

#OK

COPY_FILE_QP

#COPY_FILE LOC=IMG_DIR1,TO_LOC=/
DOS,NAME=*.IMG

#OK

COPY_FILE_QP

#COPY_FILE LOC=IMG_DIR2,TO_LOC=/
DOS,NAME=*.IMG

#OK

COPY_FILE_QP

#COPY_FILE LOC=IMG_DIR3,TO_LOC=/
DOS,NAME=*.IMG

#OK
```

When edited, the macro becomes:

```
#$Command log converted into a macro

#*.MAC Version 1

#

COPY_FILE LOC=IMG_DIR1,TO_LOC=/
DOS,NAME=*.IMG
```

```
COPY_FILE LOC=IMG_DIR2,TO_LOC=/
DOS,NAME=*.IMG

COPY_FILE LOC=IMG_DIR3,TO_LOC=/
DOS,NAME=*.IMG
```

An image sequence handling macro

To treat long sequences of images can be a tedious matter. Here is a macro which may facilitate things for you. The principle is to recall the sequence to IR-1, do some manipulation and store the resulting images as another sequence with a new name or location. The manipulations done in this example are a rotation followed by a magnification (zoom) of the images.

```
#$Sequence handling macro 1

#*.MAC Version 1

#

# Set up an area for zoom

DEFINE_POSITION_LIST NEW=TRUE,POS="100:60
140:60 140:80 100:80"

ADD_AREA IRCHAN=1,ANUM=1,ATYPE=BOX

#

# Ask for a sequence to work on, and recall it
RECALL_SEQ_QP IRCHAN=1

#

# Set up the zoom filter

SHOW_OTHERCHAN
IRCHAN=2,FILTERNAME=ZOOM,FILTERPAR=INTERPOL

$WAIT 7

#
```

```
# Set up the result storage

STORE_SEQUENCE IRCHAN=2,LOC=/H0/
WIPE_OUT,NAME=ZOOM,SEQ=TRUE,
OVWR=TRUE,UNTIL=END

$WAIT 3

#

# Step through irchan 1 and wait for end of images

START_SEQ IRCHAN=1,STEP=1

STORE_SEQUENCE IRCHAN=2,LOC=/H0/
WIPE_OUT,NAME=EOIWAIT,

SEQ=TRUE,OVWR=TRUE,UNTIL=END

$WAIT 7

#

# Display the result

RECALL_SEQ IRCHAN=1,LOC=/H0/
WIPE_OUT,NAME=ZOOM.SEQ

#

# Set up the rotate filter

SHOW_OTHERCHAN
IRCHAN=2,FILTERNAME=ROTATE

$WAIT 7

#

# Set up the result storage

STORE_SEQUENCE IRCHAN=2,LOC=/H0/
WIPE_OUT,NAME=ZORO,SEQ=TRUE,

OVWR=TRUE,UNTIL=END
```

```
$WAIT 3
#
# Step through irchan 1 and wait for end of images
START_SEQ IRCHAN=1,STEP=1
STORE_SEQUENCE IRCHAN=2,LOC=/H0/
WIPE_OUT,NAME=EOIWAIT,
SEQ=TRUE,OVWR=TRUE,UNTIL=END
$WAIT 7
#
# Display the result
RECALL_SEQ IRCHAN=1,LOC=/H0/
WIPE_OUT,NAME=ZORO.SEQ
```

Another image sequence handling macro

The previous example treated whole sequences of images.

If you want to make an individual change to each image, a loop solution is to be preferred. This example changes the emissivity of each image in a sequence without changing any other object parameter.

```
#$Sequence handling macro 2
#*.MAC Version 1
#
# Ask for the sequence name
RECALL_SEQ_QP IRCHAN=1
#
# Enable macro trigs and initiate the storage on acceptance
```

```
ACCEPT_ON_TRIG IRCHAN=1

STORE_SEQUENCE IRCHAN=2,LOC=/H0/
WIPE_OUT,NAME=EPSI,SEQ=TRUE,

OVWR=TRUE,UNTIL=END

$WAIT 3

#

# Loop through the images changing the emissivity to 0.68

$LOOP

EDIT_OBJPARS IRCHAN=1, EPS=0.68

#Send an acceptance trig, thus provoking a storage

ACCEPT_TRIG IRCHAN=1

SHOW_IMAGE IRCHAN=1,STEP=1

SET_CURRENT_OBJPARS IRCHAN=1

$ENDLOOP

#

# Note that the loop is eternal. You will have to break this
# macro manually when the sequence has come to the end.
```

An alarm macro

If you want some particular action to be taken when an alarm on the analysis results occurs, a macro could be the solution.

Note that it is nowhere to be seen that the macro is triggered by an alarm. See the ALARM command.

```
#$Alarm handling macro

#*.MAC Version 1

#

PRINT_FILE_NAME=ALARM1_INSTRUCTIONS.TXT

PRINT_RESTAB IRCHAN=1
```

3. Description of ASCII formatted result data from area, histogram and profile

Contents

3. DESCRIPTION OF ASCII FORMATTED RESULT DATA

Area dump file 3-5

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Line file 3-11

Description of area dump file.

#$**Area dump**:FK931023_00.IMG CELSIUS AR01 7 x 7 pixels (125,78) - (131,84)

78.2	77.4	75.7	73.3	70.3	67.1	64.4
77.8	76.8	74.8	72.4	69.8	67.6	66.8
76.9	74.6	71.2	67.6	63.8	60.5	58.3
78.7	77.7	75.9	73.5	70.8	69.1	69.3
79.2	78.5	76.5	73.7	70.5	66.7	63.9
77.6	75.7	72.8	69.9	66.8	63.3	60.7
7.6	75.7	72.8	69.9	66.8	63.3	60.7

Description of histogram storage file.

The contents of a HISTOGRAM, see RESULTS, can be written to a file. This file is an ASCII text file, the contents of which are described below.

Here is a sample histogram file:

#$Histogram storage

#*.HIS Version 1

#Histogram for AREA 01 unit CELSIUS

#Image CUSTOMER_1 Fri Jan 28 10:34:48 1994

##$ Testing at Customer's site AGEMA Infrared Systems AB

#$test

#*.HIS Version 2

#Histogram for AREA 01 unit CELSIUS

#Image FK931023_00.IMG Fri Oct 22 10:34:47 1993

#Cheng Shin Rubber Industry, Chaung-Hwa, Taiwan 80 KM/H 60 CM DISTANCE

#Range (low - high)	%	Acc %
#		
> 79.3	0.0	100.0
73.5 - 79.3	25.3	100.0
67.7 - 73.5	32.1	74.7
61.9 - 67.7	27.3	42.6
56.0 - 61.9	11.3	15.3
50.2 - 56.0	2.1	4.0
44.4 - 50.2	1.9	1.9
38.6 - 44.4	0.0	0.0
32.8 - 38.6	0.0	0.0
27.0 - 32.8	0.0	0.0
21.1 - 27.0	0.0	0.0
< 21.1	0.0	0.0

All lines starting with the character '#' are comment lines. Thefirst row is file title which is displayed if a detailed directory listing is made. The second row is the file version number indicating changes in file format. These two rows are found in all ERIKA system files.

The rest of the file concerns the histogram.

The third row states the analysis function used and temperature/signal unit.

The fourth row states the image source, date and time.

The following rows shows the image comment.

The histogram file ends with a frequency table which corresponds to the classes in the histogram. At the moment the number of classes is fixed to 10. The table also lists two more classes, i.e. the range from the lowest class and below and the range from top class and up.

The table has three components: range, percentage and accumulated percentage.

The range unit is specified in the third comment row. The range may also be tagged with a readout warning. The percentage column shows how many samples in percent that falls into the specified range. The accumulated column shows the percentage of samples up to the upper range limit.

Due to rounding errors the accumulated percentage may differ from 100 %.

The presentation of temperatures or object signal is sometimes accompanied by a readout warning:

—— means "No value exists". This happens for instance when the scanner is disconnected or a value far outside the current calibration is found.

* 1234 means "Uncalibrated". The value is just outside the current calibration and may still be usable. More than 10 % of the usable values in the area or line are tagged with warning status.

? 1234 means "Unreliable". The value is not ok at the moment. The reason may be that the scanner is stabilizing after a change of aperture.

Description of line file

#$

#*.PRF Version 1

#Profile for LINE 01 unit CELSIUS

#Image FK931023_00.IMG Fri Oct 22 10:34:47 1993

#Cheng Shin Rubber Industry, Chaung-Hwa, Taiwan

80 KM/H

60 CM DISTANCE

#No	(x:y)	Value
1	(110:69)	67.2
2	(111:70)	67.9
3	(112:71)	69.7
4	(113:72)	71.4
5	(114:73)	73.5
6	(115:74)	73.8
7	(116:75)	75.5
8	(117:76)	75.6
9	(118:77)	73.8
10	(119:78)	68.1
11	(120:79)	76.9
12	(121:80)	77.4
13	(122:81)	78.0
14	(123:82)	78.6
15	(124:83)	79.2
16	(125:84)	77.6
17	(126:85)	78.2
18	(127:86)	76.1
19	(128:87)	72.2
20	(129:88)	70.6
21	(130:89)	66.8

4. Thermovision® 900 Description of plot storage file

Description of plot storage file

When the PLOT function is active, the acquired plots are written to RAM. The last 1000 plots are stored and can be written to a file. This file is an ASCII text file, which can be taken up on the screen or written to a printer.

Here is a sample plot file:

```
#$Plot storage
#*.PLT Version 1
SP01 TEMP Temp                          #Task label row
Active: 1 Type: 1 Index: 1 Subtype: 0   #Task status row
Corners: 1                              #Task coordinates
(24,11)
SP02 TEMP Temp
Active: 1 Type: 1 Index: 2 Subtype: 0
Corners: 1
(67,7)
SP03 TEMP Temp
Active: 1 Type: 1 Index: 3 Subtype: 0
Corners: 1
(107,10)

001 92-03-13 09:49:29.343 0 36.055382 1 36.055382 1 35.868092 1

002 92-03-13 09:49:30.276 0 35.961784 1 35.899334 1 35.961784 1

003 92-03-13 09:49:31.209 0 35.836838 1 36.117725 1 36.211163 1

004 92-03-13 09:49:31.942 0 36.211163 1 35.680408 1 35.617764 1

005 92-03-13 09:49:33.009 0 35.899334 1 35.899334 1 36.117725 1

006 92-03-13 09:49:33.742 0 35.680408 1 35.805573 1 35.805573 1

007 92-03-13 09:49:34.541 0 35.743015 1 35.930565 1 35.649090 1

008 92-03-13 09:49:35.607 0 35.805573 1 35.680408 1 35.743015 1

009 92-03-13 09:49:35.941 0 36.086559 1 35.899334 1 35.930565 1
```

All lines starting with the character '#' are comment lines. The first row is file title which is displayed if a detailed directory listing is made. The second row is the file version number indicating changes in file format. These two rows are found in all ERIKA system files.

A plot task description is made of all active plot tasks. Each task description consists of a task label row, a task status row and up to 64 rows specifying to task coordinates.

The task label row is a redundant row showing the same data as the task status row. The first field indicates which analysis function is used as plot source. The second field shows the internal code for which function value to plot. The spotmeter task has only one value to plot - its temperature or signal value. The area and line tasks has six different values to plot: MINV, MAXV, DIFF, AVER, MEDI, SDEV. The third field is what the plot displays in the plot label.

The plot status row has four components: Active, Type, Index and Subtype.

Active indicates if the plot task is activated (1) or deactivated (0).

Type indicates if task type is SPOT(1), AREA(2) or LINE(3).

Index is task index and ranges from 1 to 99.

Subtype indicates which task value to plot. The spotmeter does not have any subtypes and will always plot its temperature/signal value. Area and line tasks have six different subtypes: Diff (1), Min (2), Max (3), Average (4), standard deviation (5) and median (6).

The task coordinates consists of one row showing the number of task singular points and then a list of those points.

After the task descriptions comes the plot value table. A plot table can hold up to 1000 values. A row in the plot value table has the following format:

<no><date><time><dst><value 1><valid 1><value 2><valid 2><value 3><valid 3>

Each field is separated with a space.

<no> : Plot value number. Ranges from 1 - 1000.

<date> : Plot value date. Format is yy-mm-dd.

<time> : Plot value time. Format is hh:mm:ss.fff and fff means fractions of a second and ranges from 0 - 999.

<dst> : Daylight savings active (1) or inactive (0).

<value x> : Plot value in floating point format. No unit is specified.

<valid x> : Indicates if plot value is valid (1) or invalid (0).

Thermovision® 900
5. How to make USER DEFINED MENU'S in ERIKA

6. Click on the top line menu. Select the "Reread .agwmrc"

7. Test by clicking on the background if the right button calls up the USER DEFINED MENU you have just written. Check the function. If you are happy with it.

8. If the system does not understand your modified .agwmrc because of some severe syntax fault, then the OS9 window you opened before editing .agwmrc will help. The .agwmrc is preserved under /H0/ASYS, so you can use the OS9 window to copy the old .agwmrc into /H0/USR/ERIKA.

   In the OS9 window give the following command:

   copy -f/H0/ASYS/.agwmrc /H0/USR/ERIKA/ .agwmrc

   Execute Re-read . agwmrc in the top line menu. The system is now back in working status.

How to make USER DEFINED MENU'S in ERIKA

The addition of USER DEFINED MENU'S in ERIKA take place through manipulation of the file .agwmrc which can be found under /H0/USR/ERIKA.

As mistakes might corrupt the .agwmrc for security reasons open an OS9 window. Do not iconify it! How to use it in case of a corrupt .agwmrc is described at the end of this chapter.

Be careful with .agrwmrc. You might destroy it if you try to manipulate it.

1. Open an OS9 window. Leave it uniconified.

2. Read the file .agwmrc into the text editor.

3. In the file under "Pointer Button definitions" add the following line:

   Button3= :root :f.menu "usermenu"

   This means that the menu will come up when you click with the right button of the mouse on the background ('root').

4. Under "System menu tree" write after the } sign

   # USER DEFINED MENU menu "usermenu"

   { "USER MENU" f.title

   "Help" f. funkey "HELPS SWORD 0 usrdef-menus"

   If you want a more complete series of functions to be carried out when you select this menu, then the last line can look like this:

   "Add ..." f.funkey "RUN_MACRO LOC=/H0/USR/ERIKA,NAME=MACRONAME.MAC"

   The macro has to be written before, of course.

5. When all changes have been written to the editor, then click on OK to store the changed file to the hard disk.

Thermovision® 900
6. External Input/ Output

EXTERNAL INPUT/OUTPUT

The THV 900 systems have four trig inputs and four outputs. Two of the inputs are opto-isolated for use with an external power supply and two that only need external closing contacts. The four outputs are used in connection with the Alarm function.

DESCRIPTION:

One D-type connector at the System Controller rear panel holds 4 inputs and 4 outputs.

The connector is marked EXT IN/OUT.

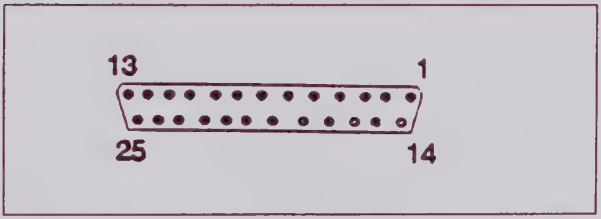

Fig. 1
Connector layout:

(Female connector at rear panel)

Isolated triggering inputs:

These inputs require an external power source.

As these inputs are opto-isolated there is no risk of ground-loops and minimum risk of having excess voltage fed to the system controller by mistake.

Trig description:

No current applied to input pins:	No trig
Current increased to trig level (corresponding to about 4 V between input pins, any polarity):	First trig
Current kept above trig level:	No trig
Current decreased to below trig level:	No trig
Current increased to trig level:	Second trig

Trig A (isolated):

Input between pin no 11 and pin no 23. Any polarity.

Input voltage 4 V (min)

12 V (max)

Input load: 10 mA at 5 V

Trig B (isolated):

Input between pin no. 10 and pin no. 22. Any polarity.

Input voltage: 4 V (min)

12 V (max)

Input load: 10 mA at 5 V

Non-isolated triggering inputs:

These inputs are used when an external closing contact is used with the system controller as driver.

Note that internal voltage and ground from the system controller is brought outside the unit.

Trig C (non-isolated):

Closing contact between pin no. 13 and pin no. 25.

Trig D (non-isolated):

Closing contact between pin no. 12 and pin no. 24.

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Thermovision® 900
1. Optional functions for ERIKA software program

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BACKUP*

This function belongs to the option DATB which does not form part of thebasic program package.

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION:

Even the biggest hard disk eventually gets full. This is even more outspoken in connection with optional hard disks for real-time recording, which generates a large amount of data in very short time. This command is usually used in connection with Digital Audio Tape (DAT) recorders.

The backup function copies a complete subtree to a backup device, which normally is a tape station. The system controller should be equipped with one if backups are to be taken. The storage of the subtree will be in a special OS9 format or a UNIX-based tar format. The backup can be read back again using the function RESTORE (see that function)..

The tar (tape archive) format allows more than one backup per tape. The special OS9 format (fsave) allows only one backup per tape, independent of the size of the subtree. As the capacity of a DAT tape is 1.3 or 2 Gbytes, it is good tape economy to save more subtrees on one tape. Note! If the tape is not used before, it is a good idea to run it forward and backward before making the backup. Use the forward and rewind functions on the backup/restore control panel.

SEE ALSO: DATB under chapter "Options" in part 2 of the manual.

RESTORE

This function belongs to the option DATB which does not form part of the basic program package.

MENU: System menu - Auxiliary file handling

OPTIONS:

DESCRIPTION:

Large amounts of data can be saved on Digital Audio Tape (DAT) recorders. See the command BACKUP. The RESTORE function works in many ways in the same manner as the BACKUP command.

Restore runs from the control panel without interactive control. If CHECK is pressed, the tape contents at the tape mark will be presented, but no files will be read. This could be useful if the tape contents are unknown. If RESTORE is selected, all files at the tape mark will be restored.

The restore function copies a complete subtree to a backup device, which normally is a tape station. The system controller should be equipped with one if backups are to be taken.

The storage of the subtree will be in a special OS9 format or a UNIX-based tar format. The backup can be read back again using the function RESTORE (see that function)..

The tar (tape archive) format allows more than one backup per tape. The special OS9 format (fsave) allows only one backup per tape, independent of the size of the subtree. As the capacity of a DAT tape is 1.3 or 2 Gbytes, it is good tape economy to save more subtrees on one tape.

Note! If the tape is not used before, it is a good idea to run it forward and backward before making the backup. Use the forward and rewind functions on the backup/restore control panel.

BURST FUNCTION
REAL-TIME RECORDING

This function belongs to the option BURST which does not form part of the basic program package.

MENU: IR menu - Store sequence

IR menu - Select source - Recall sequence

OPTIONS:

DESCRIPTION:

The real-time recording function is just a special case of the Store sequence function. Hereinafter description will be only about the parts which differ from the normal Sequential recording.

Image sequences can be recorded in real time. All images produced by the scanner are stored and can later be recalled for full analysis. Burst recording requires a special VME interface board which is inserted in a free slot in the system controller. Images are stored on one or two hard disks connected to this board or to RAM disk on the interface board.

Two disks are required to store real time sequences from both scanners at the same time (for dual channel systems). No hard disks are required if only a RAM disk is used. The burst hard disks, denoted /B0 and /B1, look as normal hard disks to the ERIKA system.

The burst RAM disk, denoted /BRAM, look as a normal RAM disk, but with limitations on file size and number of files. Store sequence and recall sequence, however, will treat these burst devices in a special way to get real time performance.

A new condition for storing images on burst disks is added. The condition "Store every #### image" allows you to store every image (1), every second image (2), every third image (3) and soon. Store at Highest speed and Store Every 1 image is the same.

The real time disk(-s) called /b0 (and /b1) look as normal hard disks to the ERIKA system. Store sequence and recall sequence however knows that these disks should be treated in a special way to get real time performance.

Almost all commands to the disks works. The exceptions are:

- You cannot rename a file on real time disk /b0 (or /b1)
- "free" and "dcheck" utilities do not work on real time disk /b0 (or /b1).

When diskburst option is installed, the AWBRU hardware is loaded and initiated automatically after start-up of normal ERIKA system. The LED digits on front of the system controller will then count from 80 to 89 during init. of AWBRU.

The burst disks are formatted when they are delivered, but just in case, here is the description anyway:

It is not possible to format the burst disk(-s) with "format" utility.

To format the disk, follow the instruction below:

- Open an OS9 window
- Type:bbumount /b0<return>
  (or "bbumount /b1" for second burst disk).
  "bbumount" makes the disk "formattable", the file system is not known any more if there was any.
- Type:bbmkfs /b0 -1 1024<return>
  (exchange b0 with b1 for second burst disk).
  "bbmkfs" builds a new file system on the disk (a warning question is asked).

  The parameters are: (1) number of frags on disk for file system. A frag is 8192 bytes.

  Use -1 for maximum possible size of disk.

(2) number of inodes for file system.

An inode is a file descriptor, describing a file. (number inodes = maximum number of files on disk) 1024 is a reasonable number. (1280 is maximum).

- Type: bbmount /b0<return>
(exchange b0 with b1 for second burst disk). "bbumount" makes the new file system on disk known to the system.

- To check the file system, type:bbfsck /b0<return>

How to access real time burst ramdisk

The ERIKA system can be equipped with a special VME interface card (AWBRU). This card may be used for real time recording of images in ram. It is also possible to connect one or two hard disks for real time storage on disk.

The burst ramdisk (called /BRAM) looks as a normal hard disks to the ERIKA system. Store sequence and recall sequence however know that this disk should be treated in a special way to get real time performance.

Almost all commands to the disks works. The exceptions are:

- You cannot create sub directories

- The disk is configured in fixed "slots", i.e. there is a fixed number of possible files on the disk. Every file has a fixed max. size depending of this number.

- You cannot rename a file on the real time disk /b0 (or /b1)

- "free" and "dcheck" utilities do not work on /BRAM instead there is the utility BBfree.

- The disk is volatile. Always copy a stored sequence to hard disk or backup before turning the power off, as all contents is erased then.

When ramburst option is installed, the AWBRU hardware is loaded and initiated automatically after start-up of the normal ERIKA system. The LED digits on the front of the System Controller will then count from 80 to 89 starting the AWBRU.

/BRAM should be configured before it is used for the first time Use special panel "BURST SET-UP" under the Equipment menu.

This configuration will set up the number and sizes of files on /BRAM.

The system requires that /BRAM is divided into fixed slot to make it possible to store real time sequences into it.

BURST SET-UP

This function belongs to the option BURST which does not form part of the basic program package.

MENU: System menu - Equipment menu

OPTIONS:

DESCRIPTION:

This function brings up a control panel, which makes it possible to change the set-up of the burst RAM disk as well as the 'real' hard disks /b0 and /b1.

The burst hard disks can only exist or not, whereas the /BRAM disk can be configured to hold files of a predefined size. The number of files depends on the RAM size.

The current setting of the RAM disk is displayed on the top three rows: device name, number of files and file size. Below are two roll choices where you can select a new file size and no of disks connected. When selecting file sizes you will see how many files the RAM disk will hold in the field next to the roll choice.

Select no of hard disks connected to the burst interface board. Each hard disk requires 2 MB of buffer memory.

Press the SET button after selecting the set-up wanted. The current setting will change if the operation succeeded.

Note! The /BRAM disk must be empty before changing set-up.

SEE ALSO: BURST under chapter "Options" in part 2 of the manual.

RADIANCE CONTROL

This function belongs to the option RADIANCE which does not form part of the basic program package.

MENU: IR menu - Create sub window

OPTIONS:

DESCRIPTION:

The radiation emitted from an object, either over the whole spectrum form 0 to infinity micrometer, or for a limited part or the spectrum, can be calculated by this function. The units used by this optional function are the following:

Emittance: amount of energy per unit of time and area emitted (W/m2).

This is the unit in which calculations are made. The emittance is given by the Planck curve for blackbodies.

Radiance: amount of energy per unit of time, area and angle emitted (W/m2/sr).

This is the unit in which the results are presented. It is the emittance divided by PI, since the surface is assumed to obey to Lambert's law.

Power: amount of energy per unit of time emitted from an area of the object (W).

It corresponds to the emittance integrated over the whole area.

The computation of the radiance etc. values are made supposing that the object is a greybody, i.e. that its emissivity is the same for all wavelengths concerned for calculated temperature "T" in Kelvin. The emissivity of the greybody is "Epsilon".

The emittance "M" of a greybody is determined by integration of Planck's formula over the wavelengths concerned.

$$M(0,\lambda) = \varepsilon * \int_{0.0}^{\lambda} \frac{C1}{\lambda^5 * e^{C2/\lambda * T} - 1} d\lambda$$

$$C1 = 2 * PI * h * c^2 = 3.741832 * 10^{-16} \left[W\left(m^2\right)\right]$$

$$C2 = hc/k = \quad 1.438786 * 10^{-2} \quad [K * m]$$

We compute the integral twice, for the upper and lower wavelength and take the difference to obtain the wanted emittance. When the upper wavelength is INFINITY and the lower is 0.0, the formula is reduced to:

$$M(0, INF) \quad = \quad \varepsilon * \sigma * T^4 \quad \left[W / \left(m^2\right)\right]$$

$$\sigma \quad = \quad 5.67033 * 10^{-8} \qquad \left[W / \left(m^2 * K^4\right)\right]$$

For a Lambertian surface, the radiance is the emittance/PI.

Implementation:

For practical reasons, we make the transformations

$$X \quad = \quad \lambda * \sigma * T \quad and \quad dX \quad = \quad T * d\lambda.$$

$$Integral(X) = \int_{0.0}^{X} \frac{C1/\sigma}{X^5 * e^{C2/X} - 1} \, dX$$

Hence one can obtain the desired emittance as:

$$M(0,\lambda) = \varepsilon * \delta * T^4 * Integral(\lambda * T)$$

The Radiance Control window asks for three parameters.

- Rad emissivity.

Fill in a value between 0.01 and 1.00 in this field, or INHERIT.

The ordinary emissivity of ERIKA is only used for the calculation of the temperature of the object. It must be true for the part of the spectrum where the scanner is sensitive. The rad emissivity is used only at the radiance analysis. It is a spectral emissivity and should be set to a value suitable for the wavelength band for which the radiance is to be determined.

INHERIT means using the same emissivities for the temperature and the radiance calculations. If you leave this field empty, INHERIT is assumed.

- Spectrum start. Low limit of the wave band of the radiance calculation in micrometers. Permitted values are 0 to 100.

- Spectrum end. High limit of the wave band of the radiance calculation in micrometers. Permitted values are 0 to 100, and INF (meaning INFINITY). It must exceed the low limit.

Press the [SET] button when you have set the wanted parameter values.
Press [SET] again after changing the radiance parameters.

Press [NEW TAB] if you want another radiance result window to appear. It will be identical to the first one.

Press [CALC'OR] if you wish to make a small calculator of radiance to appear. The computation is based on the radiance parameters shown by the radiance result window. Press [CALC] or the Enter key to activate the calculation.

"- - -" will appear if the IR channel is showing a difference image or the calculation fails for some other reason.

STORE LINES

This function belongs to the option DATB which does not form part of the basic program package.

MENU: IR menu

OPTIONS:

DESCRIPTION:

Before starting to store scanner lines, the scanner must be set in line mode. Use the scanner control window to switch between image mode and line mode. Before starting line mode, select the line to be used. There is a small arrow on both sides of the image. By clicking on the left of them and dragging the line to be used can be selected.

In line mode the scanner produces a continuous stream of lines. It is not possible to change level, span or any other image parameters while in line mode.

Lines produced by the scanner can be tagged with external trig data during storage. The trig counter is reset when the line recording is initiated. The line trig in IR channel 1 is connected to External trig A and the line trig in IR channel 2 is connected to External trig B.

The trigs can be used to mark when important things happen in the environment, making it easier to find the right part of the recorded sequence.

They are also very useful when recording cyclic events. Such a recording can, by means of these trigs, be converted to a high resolution reconstructed line sequence of one cycle.

Line sequences are recorded in real time. All lines produced by the scanner can be stored for later recall for full analysis. Line recording and replay requires a special VME interface board which is inserted in a free slot in the system controller. Lines are stored on one or two hard disks connected to this board. Lines can also be stored in real time directly to a RAM disk on the interface board.

It is only possible to store or recall a line sequence on devices /BRAM (RAM disk), /B0 (first burst disk) or /B1(second burst disk).

Two disks are required to store real time sequences from both scanners at the same time (for dual scanner systems). No hard disks are required if only a RAM disk is used.

The burst hard disks, denoted /B0 and /B1, appear as normal hard disks in the ERIKA system. The burst RAM disk, denoted /BRAM, looks as a normal RAM disk, but with limitations on file size and number of files. Store line sequence and recall line sequence functions, however, will treat these burst devices in a special way to get real time performance. Line storage and replay can only be performed in these locations, but the files can be moved elsewhere afterwards for backup if required.

The store line sequence dialogue panel is very similar to the store image sequence panel. The condition "Store every #### line" allows you to store every line (1), every second line (2), every third line (3) and so on. Store at Highest speed and Store Every 1 line is the same.

SEE ALSO: BURST SET-UP

CONVERT LINE FILE

This function belongs to the option LINY which does not form part of the basic program package. This function belongs to the option LINY which does not form part of the basic program package. For further information see the Options part of part 2 of the manual.

MENU: System menu - Auxiliary file handling

OPTIONS: Constant speed

Varying speed

Cut on trigs

Cut on lines

DESCRIPTION:

By converting a line file it is possible to get a better image of objects rotating at a high speed. If the normal line recording gives 100 lines per revolution, the conversion of this line sequence can improve the number of lines over one revolution cycle to e.g. 1000 lines or more by taking lines from different revolutions and interlacing them together into a much more detailed image. This process will be successful only if the object retains a steady thermal pattern during a number of consecutive revolutions. As the time span for this usually is in the order of a few seconds, this is normally the case.

CONSTANT SPEED (reconstruction)

Res.lines is the wanted number of lines for one revolution of the object. This decides the geometrical resolution.

'Tolerance' specifies the tolerance for a line fit meaning the distance from the "ideal" line. A higher value gives more matched lines as a result, but the result may look a little "thorny".

Interpolate, when active, linear interpolation is used to

create unmatched lines from adjacent, matched lines.

Overwrite. If active, then overwrite existing sequence.

'Skip trigs' Use only lines with trig value greater than or equal to first relative line trig value in the source sequence. The absolute trig values are shown in the line data window..

'Max.trigs'. Use only lines with trig value less than first trig + "Max. trigs".

VARYING SPEED (reconstruction)

This is another problem with matching the found lines to form a 'linearized' image of the rotating object. See CONSTANT SPEED for an explanation of the keywords besides Low speed and high speed, which mean that only lines where the speed is lower than (greater than) a specified value (unit is revolutions per minute, RPM).

CUT ON TRIGS

'Skip trigs'. Use only lines with trig values greater than or equal to the first relative line trig value in the source sequence. It is the absolute trig values that are shown in the line data window.

'Max. trigs'. Use only lines with trig value less than first trig + "Max. trigs".

CUT ON LINES

Skip lines. Use only lines with line number greater than or equal to the value put into the field <skip lines>.

Max. line. Number of lines in the resulting file.

To create isomorphic images, i. e. images in which the vertical scale approximately equals the horizontal scale, the number of resulting lines should be:

N = (pi * 2 * R * l) / L for axial scanning and
N = (pi * (R + r) * l) / L for radial scanning

where:

N is the number of resulting lines

pi is 3.14...

R is the radius of the object

r is the inner radius of the object area to be scanned

L is the length of the scanned line at the specified object distance

l is the line length in pixels

Clicking the EXEC button will start the conversion of the line data. The conversion may take some time depending on the size of the source file or the filter parameter values.

The EXEC button is popped back, and there is a beep when the conversion is complete.

Clicking the CHANGE brings up a dialogue panel for changing the source and destination line sequence files.

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